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No. 2408.—Vol. LI.

LONDON, SATURDAY, OCTOBER 15, 1881.

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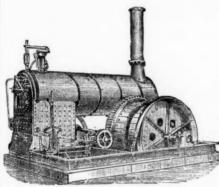
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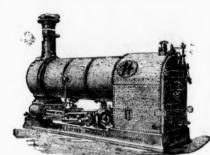


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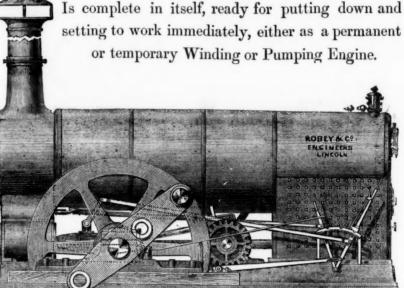


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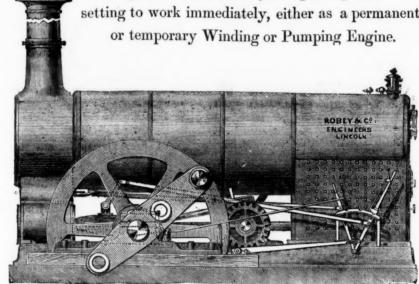
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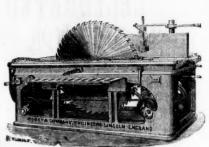


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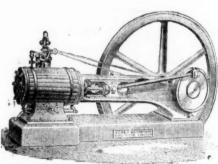




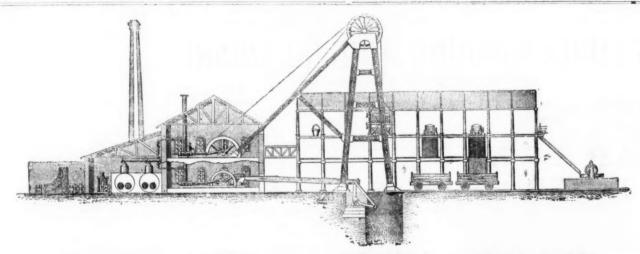
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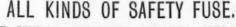
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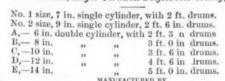
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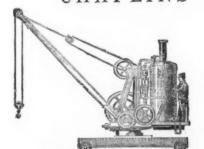
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R. SYMONS, Mineral Surveyor, Truro,
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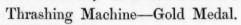
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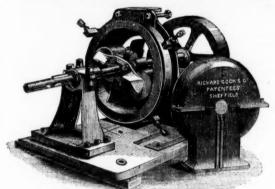
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Original Correspondence.

SOME REMARKS ON THE PROFITABLE EXTRACTION OF GOLD FROM SUPERFICIAL DEPOSITS IN WILD TROPICAL COUNTRIES .- No. II.*

BY GUSTAV JULIUS GUNTHER.

A, as to time and space, gradually progressing but well organised systematic and most thorough exploration of the wild tracts wherein gold has been found plays a very important part in contributing towards making the superficial deposits found therein profitable in the aggregate; for the confining of operations solely to the locality where gold has been accidentally found at first would not be prudent in the long run. The very fact that these deposits are of a comparatively superficial character ought to dictate the necessity of securing in the first place the most extensive mining rights over the largest possible extent of ground before any operations are at all commenced. After these rights have been properly secured then the whole extent of the auriferous formations should be explored in the course of time; and such explorations should be carried on till we come to the boundaries where formations of an unquestionably noncome to the boundaries where formations of an unquestionably non-auriferous nature begin. The taking of a too small area of mining ground (German, Grubenfeld) has proved ruinous to many concerns, especially where rival enterprises were started in one and the same district, for it is clear that one enterprise with one efficient staff of workers and one homogeneous administration is far more likely to

ground determination, which are specially where rival enterprises were started in one and the same district, for it is clear that one enterprise with one efficient staff of workers and one homogeneous administration is far more likely to make profits by working the respective deposits of the whole auriferous territory one by one, utilising the experiences which have been gained, the thorough local training of the people which has been acquired during the working of the deposits which were first pitched upon, and other favourable features, and bringing all that to bear upon the working of other deposits that may have been discovered later on. All the above indicated advantages would afford in an increasing ratio such facilities for economically working one after another all the work-worthy deposits of the whole territory as could never be obtained by comparatively new and hence locally unexperienced people. Thus a concern, though organised at first on a modest scale but with a very large field to work upon, must realise profits if the respective deposits deserve to be worked at all.

On the other hand, in the case where several concerns are established in one and the same district (always bearing in mind that the deposits we treat on are superficial ones), the original outlay becomes greater exactly in proportion to the number of such concerns, and probably after some time all of them must cease to exist with only loss to every one of them. This circumstance is unfortunately very often not sufficiently taken account of, and we find not only in wild but also in civilised countries that many mining establishments there (including even some which are work-worthy in depth) carry on a but precarious life on that very account—viz., because the extent of their mining ground is too limited, too confined, so that three, four, or five concerns thus situated must probably fail in the course of time or carry on a profitless struggle, whereas one undertaking well organised with one administration and staff which would have g

node on a large scale, explorations (if we leave aside moon veniences of a personal nature such as long rides, occasional suffering from thirst in waterless parts, &c.) are very easily and proportionately rapidly carried on. But in forest or jungle-covered countries there present themselves many and occasionally rather formidable difficulties to the explorer. Discoveries of valuable minerals—e.g., gold—in wild unknown parts of the world are generally made accidently, and chiefly by natives, and after the fact of the existence of gold in and chiefly by natives, and after the fact of the existence of gold in the locality has been proved beyond any doubt, and after we have ascertained that the character of the respective deposit is such as to justify us in taking further steps, we should obviously take that locality as the starting point for our further explorations of the country around, which explorations would step by step extend further in proportion as we get more settled, and would be carried on more vigorously and energetically if we see success before us in the first experiment. It would, perhaps, be advisable to employ in such exploratory service those or some of those of our people who were the first on the spot, and have hence already acquired some local experience, leaving the regular mine operations at the deposit first discovered to new hands. In an altogether unknown forest country the existence of navigable water-courses would considerably tend to lighten our task, for, as the case may be, we should take such water-courses as the natural main line of our exploratory system. Maps of course are of little use or none at all for our special work. Hence arises the necessity of fixing the direction of such water-courses by taking latitudes and longitudes. As, however, our main object is the discovery of gold and not of geographical mysteries, we for the sake of saving time need not be so intensely exact in that part of our work. Now a river with all its tributairs is to a geologist and mine work. discovery of gold and not of geographical mysteries, we for the sake of saving time need not be so intensely exact in that part of our work. Now, a river with all its tributaries is to a geologist and mine explorer in a wild country what to a student are the indices and subindices of a book which he has not yet read—enabling him to find more easily any passages and information he may be in search of. As the explorer is proceeding up such a water-course his first attention should be directed to an examination of both banks, penetrating tion should be directed to an examination of both banks, penetrating as the case may be greater or smaller distances into the interior of either side. But, as will be seen presently, the bed of the water-course must have for him the greatest interest. Where that bed consists of mud there it does not deserve a very careful examination, although in that case too microscopical researches might give useful results. But when we find in that bed gravel and stones, then our interest is awakened in a higher degree. As we proceed on our course, a diver (almost all "canoeiros" can dive) must take from time to time specimens of such sand, &c., up from the bottom of the water-course—the which operations are to be carefully examined as to their mineralogical character—and it is in this way that the respective water-course is made to serve, so to say, as an index to the nature of the rocks, &c., which are to be found in the territory that is drained by it and its tributaries. For example: we have found on proceeding up a water-course amongst the rock derived sand gravel and pebbles of its bed more or less well water-worn pieces of (say) epidote of a peculiar kind, the peculiarity consisting in its being impregnated with specks of native copper. (I am speaking from actual experience). Some distance we continue finding that mineral until perience). Some distance we continue finding that mineral until all of a sudden we find no more of it, not even traces, so we have at once to carefully search the river banks, and if there be a tributary we must carefully examine its bed, and if (as it actually occurred to me in South America) we find there a continuation of such epidete fragments then we know at once that that tributary is the line along which we have to search in order to discover the parent deposit which we have to search in order to discover the parent deposit whence those fragments were derived.

By carrying on our explorations in this way, taking care to put by

in proper order and labelled all the minerals thus found, and mark

"N.B.—For No. 1, see Mining Journal of Aug. 6, where in line 55, for "the whole," read "the which"; line 88, for "this merited," read "their merited"; line 2, second column, for "general" read "personal"; line 75, for "justifice," read "possibly,"

RIO GRANDE DO SOL (BRAZIL) GOLD MINING COMPANY.

SIR,—In the Journal of June 25 there appears the account of the special meeting of the Rio Grande do Sul (Brazil) Gold Mining Company, held on Friday the 18th, when Mr. Clemes attended, and his report on that company's mines was read. Now, Sir, putting aside for the moment the complete corroboration of the valuation made by me in 1879, and upon which alone the property changed hands, it must have struck most of your readers as being very undignified and extraordinary as well as ungenerous that statements affecting my capacity and personal character were permitted to be made in my absence, thus prejudicing the public mind against me in advance, without my having received any notice of such intention or even of any complaint, and affording me the opportunity of explaining or refuting those caluminous charges. It is so un-English that one can hardly believe it took place in London, and amongst Englishmen. I ask you to allow me (though late in the day) through your columns to protest against the right of anyone to sacrifice the liberty and character of another upon the altars of animosity, malice, and false-hood. I shall take from here legalised and undeniable proofs that there is not a tittle of truth or fact in any of the statements made at that meeting, that the imagination has been largely drawn upon, and that it savours still of the malignity displayed towards me by certain parties in the board as well as out, who have long conspired by most unworthy means to get rid of me as soon as my exertions in acquiring the property had borne fruit, for it was almost entirely through the personal exertions of the late J. C. Backheuser and myself that-this company became the possessors of a property never excelled and probably rarely equalled both in value and the price paid for it, and it would puzzle anyone to show how Mr. Griffin first brough ti before the public. Of this gentleman I shall have to speak more particularly later on. Had the meeting, Sir, on June 1, been co good and sufficient reasons for taking such an extraordinary and unwarrantable step a month after they had declared at the general meeting that they were well satisfied, and, if necessary then, why had such a course not been adopted to verify matters before they asked the public to subscribe their money; but now, nothwithstanding the confirmation of my report, the board have had the immorality to charge to my account Mr. Clemes expenses out here. Let anyone read between the lines of that and the following paragraph, and they will not fail to see where the shoe pinches, and how immaterial it was to the board to what extent they went to be free of me. Mr. Bergtheil assured the shareholders (according to your report) "that the directors had done all they could, but they been unfortunate in the selection of their first manager." True it is that one side of a story is very good until the other is heard. The board had nothing whatever to do with my selection. My appointment for five years was a condition of the original agreement of sale, by which alone the liquidators would consent to take deferred shares in lieu of money, and then gave a guarantee against the depreciation of their shares, whatever to do with my selection. My appointment for five years a was a condition of the original agreement of sale, by which alone the liquidators would consent to take deferred shares in lieu of money, and then gave a guarantee against the depreciation of their shares, and so instructed their attornies, Messrs. Hollocome and Griffin, by special letter of Sept. 19, 1879, to see this was made secure by insertion in the Articles of Association, and upon which the board congletion in the Articles of Association, and upon which the board concorned to the contracts made in London to be duly fulfilled), and the original process of the contracts made in London to be duly fulfilled), and the original process of the contracts of the contract with the liquidators will prove this, and anything done to the contrary our Courts of Equity will set aside. Besides, had my managership been called to account when Mr. Clemes was engaged, when I had only just assumed charge? The board's very acts, therefore, condemn them, and witness more powerfully against their probity and equity than all I can advance against them. Had Mr. Bergtheil added to his first paragraph, "all they so could to ruin the enterprise," he would have stated the exact truth, as I am prepared to prove by documentary evidence, which will also show how the board has been divided against itself, and I do not doubt but that the public and shareholders will learn with astonishment that though from the first I was expected to carry on the work with vigour, maintain the men sent out under contract, and to push forward the extraction of rich rock, the board have not addressed me a line direct or through their secretary from December last, and, moreover, dishonoured every bill drawn by their agents from that month, notwithstanding their telegraphic instruction causing the agents to resign "in disgust, declining to do business with people who set commercial faith aside, and consider it worthless." I would publicly record the fact that Mr. Clemes never saw a pound of the

works going at all, nor be able to leave Lavras for England, as the board three every possible obstacle in my way, repeatedly issued instructions that no funds should be supplied me, and, finding they had no power to turn me out, they cabled that they did not wish me to remain, and that as long "as I did so no money should be forthcoming to pay the men, but as soon as I left ample funds should be ment"—thereby forcing me on behalf of the creditors to leave under protest, which I published throughout Brazil. During the whole of this year the board have persistently refused to pay my salary, though, doubtless, not omitting their own, and I have never paid myself when it has been in my power so to do, looking to the imposed the cambar than a davice given them by Mr. Clemes relative to the road from Lavras to the mine (Aurora), and of his proposed site for the reduction works, adding "that they had nothing to do but erect this new found iron overshot wheel," &c. I can only say that Mr. Clemes any further extension of time for the privileges of the concession, which for any other property than that we have expires met to refuse any further extension of time for the privileges of the concession, which for any other property than that we have expires met to show with verified proofs that his statement is absolutely untrue in every particular. With regard to the iron water-wheel alluded to by the Chairman I feel sure when the truth is known that none washing quartz and gangue stuff. Three splendid washings were

ing out the spots where they ceased to be found, we obtain a skeleton insight into the geological and mineralogical character of the track of country that is traversed by that ramification of water-courses.

Lössnitz, **Erzgebirge**, **Saxony**, Oct.**

RIO GRANDE DO SOL (BRAZIL) GOLD MINING COMPANY**
SIR,—In the Journal of June 25 there appears the account of the special meeting of the Rio Grande do Sul (Brazil) Gold Mining Company, held on Friday the 18th, when Mr. Clemes attended, and his report on that company's mines was read. Now, Sir, putting said for the moment the complete corroboration of the valuation made by me in 1879, and upon which alone the property changed hands extraordinary as well as ungenerous that statements affecting we have struck most of your readers as being very undignified and extraordinary as well as ungenerous that statements affecting was been company, and upon which alone the opportunity of explaining the public mind against me in advancy as well as ungenerous that statements affecting was been called the property desired that there is not a divide the property of the special meeting of the Rio and the property of the special meeting of the Rio and the property of the special meeting of the Rio and the property desired the special meeting of the Rio and the property desired the special meeting of the Rio and the property desired the special meeting of the special meeting of the property desired the property desired the property desired the special meeting of the property desired the property de

the gold. I devoted four months to my examination in the first instance, and he six days.

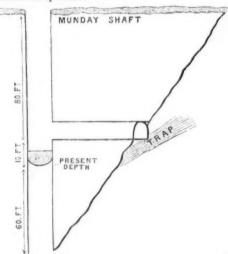
That the directors have been fighting a phantom and making much ado about nothing in getting the Permanent Commission to illegally change what the liquidators positively refused to in the conveyances will be evident to all when I assure them that the titles were always clear, and under Brazilian law the value of the conveyance has not been changed one whit, nothwithstanding anything to the contrary by the board. I would add, finally that Mr. Griffin has never been near the mines, and has gathered all he knows from hearsay and my report, which he thought very highly of at the time, though in November last, prior to the conveyance being completed, he came out to Rio to try and wind-up the concern, which alone led to the insertion of the clause objected to. I desire nothing but justice, and if I can obtain it from the body of shareholders I shall be satisfied—otherwise I shall have recourse to our tribunal, when I am quite sure the acts of the board will be condemned and set aside, and myself justified. In the meantime, and until the Courts decree otherwise, I am, Sir, your obedient servant, am, Sir, your obedient servant, HUBERT BANKART,
Chief Engineer and General Administrator of the Rio Grande do Sul
Gold Mining Company (Limited), in Brazil.

Larras, Aug. 20.

INDIAN GOLD MINES-THE MAHARAJAH'S VISIT TO

COLAR.

SIB,—In addition to the report of the visit of the Maharajah to the mines in this district, which you will have received by last mail, the few further particulars which I now subjoin will be of interest to the readers of the Mining Journal. With reference to Ooregum, for example, I can furnish you with a more detailed account. I must premise that I am not an official of any English company, but am in residence here for a month or so as the consulting engineer to a private firm, loaned as it were to a company to advise on what works shall be carried out for the speedier development of the mine. The superintendent is said to be a cousin of a gentleman who assisted in promoting the company, and "Dowb" must be taken care of. There is more than one case of the kind on the field. So one who never saw a mine before is appointed manager. He has certainly a good Cornish captain under him, but this is unfortunately his first adventure from Cornwall, and he is quite unacquainted with the nature of quartz in gold reefs, and expects to find the gold visible in quartz, showing itself like copper or tin. He consequently formed a very prejudicial opinion of the lode, and has only sunk 5 ft. of winze in it since he came out last March. A great deal of dissatisfaction consequently prevails among some who are heavily interested, and I am here—v.ila tout! A letter from London (the Stock Exchange) hints, and rather more, that the superintendent's cousin has cleared 27,000! by "bearing" the shares. At any rate, the works carried on—or not carried on—here have very greatly assisted such an operation.



panned out from the stuff just previously brought to surface from the winze sunk 5 ft. in the 80 ft. level, and two buckets of stuff from the lode 18 in. above it. The result of one washing being quite equal to an assay of 20 oz. per ton, as from 5 lbs. of stuff there were the lode 18 in. above it. The result of one washing being quite equal to an assay of 20 oz. per ton, as from 5 lbs. of stuff there were panned more than 100 specs of gold, one of the grains being over in. broad by 1-32 in. thick: it was explained that this winze was temporarily abandoned in consequence of the too great influx of the water, and that by sinking the main shaft 10 fms. deeper the lode would about come in, when a rise would be made to present level. The Maharajah cordially wished we might cut the lode as rich as the present washings showed. Several stones containing visible gold were picked by the visitors from the small pile, whilst the fine specimen presented by the superintendent to his Highness was thoroughly studded with the precious metal, indeed would assay over 500 oz. to the ton. This latter piece of quartz was taken out some eight weeks previously, just after commencement of sinking the same winze. It was pointed out that the east main shaft now being sunk would intersect three reefs, which had been regularly quarried by the natives; that when a depth of 20 fms. had been attained, and No. 2 reef reached, a cross-cut would be driven east and west to reach the other two reefs, not more than 20 fms. distant. That by this one sinking two other shafts, 70 fathoms to the north, would be drained, enabling the miners to go down on a shoot of auriferous quartz standing there when the water coming in compelled an abandonment. Both the Maharajah and his Minister manifested great interest in the working of the engine and pumping machinery, finally visiting the Munday shaft, to inspect the internal arrangements for pumping, hauling, &c. On departing his Highness was pleased to express his satisfaction with all he had seen. Capt. Bryant was also in attendance.

RANAJEE STEFJEE. Bryant was also in attendance. Colar, Sept. 9, RANAJEE STEFJEE.

INDIAN GOLD MINES.

INDIAN GOLD MINES.

SIR,—Thanks for inserting my long letter in last week's Journal as to these shares. The Trevelyan Company will begin permanent work before the end of this month if all goes well, with three batteries of two elephant stamps each, which will crush about 50 tons of quartz every 24 hours. I am especially interested in this company. A large portion of its land adjoins the Rhodes Reef and bounds it, and on this latter ground the machinery will be erected by the end of the month, and I suspect the quartz which Mr. Brough Smyth has just assayed, and which, as telegraphed, gave 18 ozs. to the ton, came from the Rhodes Reef land. The Phœnix Company will commence crushing next month, and the shares are very cheap, but I positively say the Trevelyan shares are the cheapest in the market. The Mysore Company began work, but had to make some alterations in the machinery which they finished about the 20th ult., since which I believe they have been at work. There is a strong feeling amongst all well informed people that the success of this industry will very soon be demonstrated, and Indian gold mine shares (of good companies) will rise to their proper value.

Dublin, Oct. 12.

AN INVESTOR.

INDIAN GOLD MINES-ENORMOUS YIELD

SIR,—The following appeared in the City Article of Tuesday's tandard:—"In connection with the Miscellaneous Department, it Standard:—"In connection with the Miscellaneous Department, it may be mentioned that telegrams were acceived from Mr. Brough Smyth by the Devala-Moyar and Rhodes Reef Companies stating that from assays of quartz showing no visible appearance of gold he has obtained a result of 14 ozs. per ton." On reading this announcement I thought that the telegram referred to was either a hoax or that 14 ozs. was a misprint for 14 dwts. I, therefore, called on Mr. Frewer, the secretary of the companies mentioned to ask if therewer. that 14 ozs. was a misprint for 14 dwts. I, therefore, called on Mr. Frewer, the secretary of the companies mentioned, to ask if the news were authentic, and I was agreeably surprised to learn that there was no question about the assay having yielded 14 ozs. to the ton, for Mr. Brough Smyth had notified the same by letter, not by telegram, as stated in the Standard, and I hope you will make this fact known in Saturday's Mining Journal, for it goes far to prove that the auriferous reefs of Wynaad district equal in richness those of California, and that those persons who now buy and take up shares in the established Indian gold mines may—if they can afford to lock up their shares for a few months—reap enormous profits, for Mr. Brough Smyth is too cautious and reliable a man to write such news to his directors unless this assay had been made from a fair and not a picked sample of the reef. Investors should not, however, expect good results from the first crushings, for surface quartz is seldom rich good results from the first crushings, for surface quartz is seldom rich in gold, and the reefs must be well opened up before large returns can be made.—St. Stephen's Club, Oct. 12.

X. Y. Z.

ORDINARY MEXICAN RAILWAY STOCK.

SIR,—I am very pleased to notice that my views respecting Mexican Ordinary Railway Stock reaching at least 100*l*. for the 100*l*. stock re-ceive complete confirmation from Mr. Abbott's Circular for October, where he says he is of opinion that the dividend will be at least 6 per cent., with an apparent certainty for seven. Truly it is odd to see Metropolitan and other stock only paying 5 per cent. at 121, with Mexican Ordinary Stock about to pay 6 per cent. at least is only 92.

THE POTOSI GOLD MINING COMPANY

SIR,—The only shareholder who appears as yet to have received any interest for his investment in the above company is the gentleman who, at the statutory meeting held on March 30, anticipated the promised dividend by appropriating a valuable piece of quartz, and if we are to believe the report of Mr. Brenton Symons, the company's superintendent, he is the only person likely to do so. I have before me this report, together with remarks on same by the mining engineer, Mr. T. B. Provis. The report itself is incomplete, inconsistent, and unquestionably inaccurate.

1. Its incompleteness I quote from page 18—"To obtain by quartz.

sistent, and unquestionably inaccurate.

1. Its incompleteness I quote from page 18—"To obtain by quartz sampling as fair an average as possible, Mr. Ward (the assayist to the company) went underground and himself took samples along the bottom of the mine at every 50 yards, and also in the bottom of the three shafts. These he mixed in equal weights together, and careful assay gave a grade of — ounce per ton.—Note by board: In consequence of Mr. Ward's illness this is left blank."

2. Its inconsistency Mr. Symons says on page 20—"Seeing that the Chili vein will probably be exhausted in the next two years, it is not to this mine that one must look for very profitable results." He also says on page 8—"The erection of a compressor to drive rock drills would be an ill-advised proceeding, as by the time the drilling machinery had been sent out the mine would be nearly exhausted. In the future the introduction of rock drills can be considered."

3. Its inaccuracies, on page 18, he states that during the month of July 1881, 877 tons of quartz were milled, which produced 978 ozs. of gold, which added to the loss shown in the tailings would give a grade of 1115 oz. per ton.

480, loss in tailings.

336. different weights

.336 " different weights.

showing that he has been dealing with nearly 2 ozs, stuff at the very lowest. Now this cause of the non-success of the present undertaking are not very far to seek.

taking are not very far to seek.

Mr. Symons has for some time been ill, suffering from brain fever.

Mr. Ward, the assayist, was too ill to give the result of his labour.

The workmen are the scum of other mines. On page 5 it runs thus—

"By the crection of the comfortable dwellings proposed we shall gradually enlarge the number of steady workmen, and get rid of the drunken characters now here, who are mostly workmen discharged from other companies, and are quarrelsome and imprudent." On page

principal men at the mine are laid up-the workmen are the refuse of the mining district, and an unknown quantity of gold stolen every month. Could any concern in the world be worked profitably under such circumstances? There is as yet no proof whatever that 3 ozs. per ton cannot be realised. The quartz possibly during the last six per ton cannot be realised. The quartz possibly during the last six months may have yielded this quantity, and it may have found its way into the pockets of the miners in the unavoidable absence of their chief. The mine has before this fluctuated very much. Take

their chief. The mine has before this fluctuated very fluch. Take extracts from the prospectus:—

Tons.

1877—February 400 419 1048

1878—July 352 452 1286

August 563 639 1136

October 220 201 916

Since that time as much as 4 ozs, per ton has been yielded, and through the whole of 1890 an average of more than 3 ozs. It is

through the whole of 1880 an average of more than 3 ozs. It is sincerely to be hoped that at the forthcoming meeting some energetic measures may be decided upon to rescue one of the finest mining properties in the world from the inevitable winding up which Mr. Symons' report would indicate. Apologising for the length of this letter (Victorial, Oct. 6 letter.—Chiswick, Oct. 6.

EMMA MINING COMPANY.

SIR,—Can any of your readers give some information relative to the position and prospects of this company? It is nearly 12 months ago that the shareholders were led to hope their interests would once again appear on the surface, and it must be a great trial of their patience that so long a time has elapsed during which there has been no further intelligence as to what causes the delay of the settlement. no further intelligence as to what causes the tensy of the section of the shareholders at rest by a simple statement through the Journal as to the progress (if any) being made, whether the mine is at work and other information briefly representing the state of affairs that would interest those who have so long waited further development.

THE RICHMOND CONSOLIDATED MINING COMPAN

THE RICHMOND CONSOLIDATED MINING COMPANY.

SIR,—The announcement from your Nevada correspondent in last week's Journal of the extraordinary discoveries of ore of high grade in the Eureka Tunnel must be very encouraging to all who are interested in the shares of the mines of the Nevada district. The Richmond tunnel runs parallel to the Eureka, and the recent discoveries of the latter have been at 1700 ft. in depth. The Richmond is now at about 1200 ft., and on account of the trend of the ground this is equal to 1500 ft. at the Eureka, so that when the Richmond shaft is driven about 200 ft. deeper similar deposits may be expected. The present value of the ore raised from the latter mine varies from 10t. to 12t. per ton, giving an annual yield of over 400,000t. The ore recently struck in the Eureka tunnel is valued at 100t. to 20t. per ton, and when similar valuable ore is struck at the parallel depth, as in all reasonable probability it will be in the Richmond Mine, the receipts will be greatly increased, and the shares instead of selling at 15t. each will be enormously enhanced in value. The recent discovery proves one fact of the utmost importance—that in the mines of the Nevada district the most valuable deposits are at the greatest depth. The Eureka tunnel at 1700 ft. is the lowest point yet reached, and it is at this great depth that this marvellously rich ore has been discovered. More of mining experience have always been of pointen. and it is at this great depth that this marvellously rich ore has been discovered. Men of mining experience have always been of opinion that these mines would improve in depth, and it only needed the confirmation of actual facts to bring the mines of Nevada to their proper estimation in public judgment.

AN OLD MINER.

RICHMOND CONSOLIDATED MINING COMPANY.

SIR,-The fact that Mr. Rickard should cease to be in the service of this company need not, I think, be interpreted as a sign that "the ship is sinking," as we were told by a most self-denying shareholder. While, however, I am not, for one, disposed to place much confidence in such insinuations, made, most of them for selfish ends, yet I cannot help thinking that if the ship is not sinking it is nevertheless a fact that the crew—that is the shareholders—are put on short rations. fact that the crew—that is the shareholders—are put on short rations. The machinery and furnaces were put in thorough repair and order, and yet since they resumed smelting after the loss of two months they have only smelted 700 tons of ore per week on an average, instead of smelting 1000 or more, as they did before. Why is that? There can be, I think, one answer only. Either the chambers are getting worked out or the fear of finding no more ore has had the effect of the furnaces being put on short rations. There have been no discoveries made in the lower levels, and the few indications of cutting ore have not held out. The chance of finding ore at the lowest levels must indeed be very slender, since none has been found in the intermediate ground. Water is much more likely to be met with than ore. With such prospects are the shares worth 200 per cent. premium?

COMMON SENSE.

RUBY AND DUNDERBERG MINING COMPANY.

SIR,-With reference to the recent extraordinary and unjustifiable SIR,—With reference to the recent extraordinary and unjustinable fall in the price of the above shares, which is mainly due to the manipulations of sanguine "bears," permit me through the medium of the Journal to beg holders not to be frightened into parting with their shares. That there is a bright future for this company is, I consider, beyond a doubt, and if holders will only determine to checkmate the "wreckers" by keeping a tight grip on their shares I foresee a substantial improvement in the market value of their securities. A SHAREHOLDER.

EUREKA (NEVADA) MINING DISTRICT.

EUREKA (NEVADA) MINING DISTRICT.

SIR,—I have the pleasure to hand you my usual budget of news received from this mining centre:—

We learn that there are good indications for getting ore in the Prospect Mountain Tunnel—a consummation devoutly to be wished.

O. J. Salisbury, one of the proprietors of the Geddes and Bertrand Mine, went to Secret Canyon yesterday, and returned last evening. Active operations will be commenced in a few days.

Charley Broy's big teams are hauling immense quantities of mining supplies and provisions to the Geddes and Bertrand Mines at Secret Canyon.

The Geddes and Bertrand Mining Company have over 100 men employed.
A large force of miners will be put to work in the Eureka Tunnel next week. Yesterday being a kind of holiday a number of our prominent business men took occasion to visit the Albion Mine and the Eureka Tunnel. They were well pleased with the appearance of the properties.

Maurice Hartnett, foreman of the Eureka Tunnel, informed us last evening that the bonauza continued to look splendid.

The bonauza in the Eureka Tunnel continues to improve as development is made.

The boilers for the new holsting-works of the Eureka Consolidated are side-

tracked at the works.

Ed. Clute and Jack Perry visited the Eureka Tunnel yesterday, and were highly delighted with the appearance of the strike just made. The tunnel has been closed to visitors.

been closed to visitors.

A contract was let yesterday for running 20 ft. of a cross-cut on the Onondaga Mine.

Sealed proposals will be received by the Satellite Company up to the 25th inst. for sinking 100 ft. of shaft. Size of shaft, 5 by 3 feet.

Max Muller yesterday made some assays of ore from Safford district that went high in the hundreds.

The Contention Mine at Safford district was yesterday bonded for \$35,000; \$8000 of the money was paid in cash.

It is runnoured that the Standard Mine of Bodie will be listed on the London Stock Board.

London. Oct. 12.

GOLD MINING ASSOCIATION OF CANADA.

SIR,—As a constant reader of your impartial and widely read Journal I have perused with some surprise the letter from Mr. A. A. Humphrey, appearing in the Journal of the 1st current. Mr. Humphrey is virtuously indignant. Mr. Hu nphrey is horrorstruck at the audacity of a correspondent of yours, "Observateur," in presuming to direct attention to the want of success which has so far characterised his operations on the preparity of the Gold Mining Assa. from other companies, and are quarrelsome and imprudent." On page 19 the following will be found:—"But the greatest trouble by the present system is the obvious uncertainty that the product of stamping an in its entirety be collected, as during the night there is no control over the watchers who can if they should feel disposed help themselves to the amalgam. To indicate the aggregate amount of stealing which takes place in the mines of this district it may be mentioned that 1500 cas. of gold are sold in Bolivia each month outside the knowledge of the companies." Now to sum up—the two

can assure Mr. Humphrey, at any rate, that the statements of Observatour" are not only true, but can be substantiated.

In conclusion, reviewing the career hitherto of the Gold Mining Association of Canada, it seems to present another melancholy example of the error which characterises the inception of so many ample of the error which characterises the inception of so many public companies—I mean the error of regarding as facts the ultra sanguine anticipations of "immediate profits," by which persons are led to invest their hardly-earned money. If intending shareholders would only first carefully investigate for themselves the flattering tales told by hopeful promoters much loss would be saved to them. selves, and much public benefit would accrue.

C. C. BAKER.

Fernlea Road, Balham, Oct. 12.

BRITISH MINING ENTERPRISE IN SOUTH AUSTRALIA.

BRITISH MINING ENTERPRISE IN SOUTH AUSTRALIA.

SIR,—Referring to my letter of Aug. 25 (see Mining Journal, Oct. 1)
I can now inform you that I have secured an agreement for a 21
years' lease of about 300 acres of land on which there are several
lodes of galena. They were worked some years ago but abandoned,
not from any poverty or falling off in the ore, but from entirely different circumstances. Indeed one section, about 80 acres, was greatly
improving in richness when the work was stopped. It had been
profitably worked by an English company, and was known as the
Wheal Watkins Silver-Lead Mine. The others are in Glen Osmond,
all within about five miles of Adelaide. Mr. A. L. Elder could, perhaps, from recollection give some information about them. I am in
treaty for another valuable silver-lead mine also connected with the
above, and if I succeed in securing it the property will comprise nearly
400 acres in one block. The terms of the lease are so far agreed upon,
a rental of a few shillings an acre for the land, good grazing land, a rental of a few shillings an acre for the land, good grazing land, and as such valuable so near the city, and a royalty of 1 in 30. Some people in Sydney made an offer for these properties, but not coming up to time I secured them. I will sell the leases for 500l. of those already secured, and 250l. additional if I secure the last named, subject to agents' commission in London. It would be worth while form investigate the secure of the secure o for an intending purchaser to telegraph to me, and he should send a deposit also. I would then arrange the matter at once. I am in-creasingly convinced there ought to be a great deal done here in this way. In investing for capitalists I do not refer to shares, which are generally too ticklish to deal in for others, but to mineral properties of real value, many of which come in my way, and may often be cured either to lease or purchase on very advantageous terms.

Adelaide, Aug. 31.

J. B. Austin.

MINING IN WESTERN AUSTRALIA

SIR,-In the Journal of Aug. 13 was a short paragraph concerning the Fortune Copper Mining Company of Western Australia (Limited), and stating that a Mr. Frederick Barnard Leening, of Coleman-street, has been appointed official liquidator of the company. I should be greatly obliged if any reader could give me some further particulars concerning this company—when it was started, the amount of capital, and if the management was in London. I am much interested in Western Australia and wish particularly to can much interested in Western Australia, and wish particularly to gain all the information possible as to its mineral resources and future prospects.—Blewbury, Berks, Oct. 11.

H. C. SLADE.

QUICKSILVER.

SIR,—Feeling the greatest confidence in the reliability of the firm from whom my statistics are obtained, I refrain from giving further publicity to the debated points, leaving any who may feel an interest in this controversy to inquire at their metal brokers as to the matter. The further rise that has taken place in the value of this article is again confirmatory of the correctness of my auguries, and as the Californian source seems a bête-noir to my statistical disputants, the following tabulation relating to the New Almaden Quicksilver Mining
Company will probably cause them some surprise:

Ore raised. PerOre raised. PerAlecke by Dele

Company will probably cause them some surprise:

Ore raised.

tons.

Ore raised.

tons.

2,485 ...

36 74 ...

23,875 ...

150

Feb. 1, 1861, to Jan. 31, 1862...

7,640 ...

20 22 ...

40,391 ...

40,391 ...

40,391 ...

30,677 ...

292 ...

23,465 ...

37

These figures clearly illustrate that with the necessity of an increased transfer and the property of 1850...

creased tonnage output, multiplied some 12 times over that of 1850-1, the total number of flasks compared with that year is barely main-tained, and even after this enormous addition to its cost the price of uicksilver is so reduced that the balance-sheets of this company for quicksilver is so reduced that the balance-sheets of this company for 1880 must afford a singular contrast to that of 1850—1. The bearing of the above summary is of greater moment when it is taken into consideration that out of a total Californian production (1880) of some 55,000 flasks, New Almaden contributed 23,465. There is yet a point worthy of attention—viz., that the importations into London for nine months ending Sept. 30, are but 48,926 flasks, compared with 55,985 to same date in 1880, and again apart from the article's position, the ensuing fortnight should witness the announcement of the Mysore crushing, which, on dit, are taking place on a ment of the Mysore crushing, which, on dit, are taking place on a large scale. Expecting that the next month or so will so bear out my views that my statistical disputants will be compelled, hon gré, mal gré, to admit that hopes held forth were not after all too sanguing—Random, Oct. 11. guine .-- Roydon, Oct. 11.

GELLIVARE IRON ORE EXPLOITATION.

SIR,—Your readers have no doubt perused with interest in these hrilling scientific times, on the eve of the meeting of the Steel and Iron Institute, my various contributions, which, with the tender of my acknowledgements for your indulgence, I purpose bringing to a close, having been counselled by the leading parties in the North of Sweden to place the matter in the hands of a Westminster civil engineer to report upon. I have acceded, with due alacrity to this practical advice, and I hereby transmit a draft prospectus:—

THE GELLIVARE STEEL AND WOOD COMPANY (LIMITED).

CAPITAL \pounds , IN SHARES OF \pounds EACH.

The primary object of this undertaking is the exploitation of the Gellivare Iron Mountain, and the conversion of the ore into steel, combined with the felling, sawing, and export of the Swedish forests, rendered practicable by a system of (non-surface) elevated undulat-ing railway constructed entirely of wood, as in America, and worked without the expense of iron, or new-fangled steely-iron rails and comotives.

Mr. Henry Thomas, F.G.S., mining engineer, made an official visit to the Gellivare Iron Mountain, which, in his report, he states is 4 to 5 miles in length, \(\frac{3}{2}\) to 1\(\frac{3}{2}\) in breadth, and 450 to 500 ft. in height, from which 7,000,000 to 8,000,000 tons of very pure magnetic iron ore may be readily extracted without the application of any machinery, which quantity may be considerably increased, yielding in the (imperfect) blast, hymner of the North 60 to 70 per cent and upwards (imperfect) blast-furnace of the North 60 to 70 per cent, and upwards pig-iron. Any amount of charcoal is obtainable at a low cost. Dr. Ure's "Dictionary of the Arts," Vol. iv. (1878) states—"The

se denosits of magnetic iron ore in Swedish Lanland as

by Government as high as 74 per cent., have remained unworked on account of their inaccessible position."

Dr. Percy, in his "Text Book on Metallurgy," says—" Gellivare abounds with magnetic oxide of iron, from which the finest quality of steel is produced."

Dr. Siemens, representing the steel makers at the meeting of the Iron and Steel Institute at Liverpool, said—"Steel of a high quality was almost indistructible. It would bend like leather, extending, but not breaking; but if the high pedestal of perfection were left they got a very treacherous material." Ye steely iron rail makers got a very treacherous material." Ye steely iron rail makers en to such and to Mr. F. G. Field's statement. "We have no that steel rails in getting cheaper have retained their quality, it being well known the number of such that have broken in Canada, as against iron rails that have stood 10 or 15 years with scarcely a single case of fracture in Sweden conditions of climate analogous." The highly valuable work, "Sveriges Geologiska Undersökning, shows the immense and indisputable superiority of the Gellivare iron ore over Spanish for conversion into the very highest class steel. The import of iron ore last year was 2,621,919 tons, of which 2,278,962 tons from Bilbao is greatly in excess of previous years, and more than double that of 1879. Bilbao, in the dreadful Bay of Biscay,

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has the worst (shallow) harbour in Spain, the conveyance to the seaboard costly, and on account of the small vessels alone capable of gaining in, and egress at restricted periods, burdened with a high rate of freight. With cheap land transport from Gellivare to the Norwegian non-freezing seaboard, and the employment of the largest size steamers loading mixed cargoes of wood and steel, competition of Bessemer, Siemens-Martin, and Thomas-Gilchrist products of steely-iron will be perfectly futile with Gellivare pure highest classified free of phosphorus.

of Besselner, stemens-nartin, and Thomas-Chemise products of steely-iron will be perfectly futile with Gellivare pure highest class steel free of phosphorus.

With land and wood for the construction and equipment of the line free, apart from a considerable State subsidy, an exuberance of cheap labour, housing and aliment, and trees from unfathomable primeval forests permeating the track of the proposed railway, for felling, sawing, and export at a merely nominal cost, their sale hitherto rendered impossible for want of means of transport, and when even possible to the rivers entailing as much as two years in floating to the mills, and eight months ice-bound ports a safe, and highly remunerative investment presents itself, more especially when it is known the said eight months ice-bound ports of the Gulf of Bothnia will be eschewed, and the whole of the produce shipped from an always accessible deep-water, non-freezing, Norwegian port, the mere felling, sawing, export, and sale of the forestal produce will enable the distribution of a minimum annual dividend of upwards of 10 per cent. to be made—Sweden and Norway being out of the European warlike zone, and keeping aloof from the periodical political embroilments, with a law-abiding population, capital invested in the dual countries is on the most secure footing. It would be of too embrollments, with a law-abiding population, capital invested in the dual countries is on the most secure footing. It would be of too prolix a nature to enumerate the divers matters for investigation, but I may confidently state that the most minute calculations, fortified by the highest practical data, will bear the scrutiny of the most experienced experts to which they will be now submitted, preliminary to launching an undertaking replete with elements of success and of the most vital importance to the world at large.

Little Tower-street, Oct. 11. —— W J. THOMPSON.

WEST PRUSSIAN MINING COMPANY.

SIR,—I shall be obliged if you will allow me space in the Journal to point out that the report of this company's annual meeting, in to-day's Mining Journal, is incorrectly headed Bavarian Lead Mining Company.

E. GARCKE,

Secretary West Prussian Mining Co., and Bavarian Lead Mining Co.

Westminster Chambers, Oct. 8.

ROCK-DRILL COMPETITIVE TEST.

SIR,-In last week's Journal appears a letter signed "A Purchaser, 1.—That Cardiff Exhibition authorities knew nothing of the pro-

posed trial.

2.—That the diameter of the hole bored by the Normandy drill was

2.—That the diameter of the hole bored by the Normandy drill was only 1 in., against 1½ in. diameter of hole bored by the Eclipse drill. As to first point, Mr. P. H. Riches, engineer of the Taff Vale Railway, and Chairman of the Machinery Section Committee, settled with all the exhibitors to try their drills on the block of Cornish granite provided by us, and the trials were conducted before Mr. R. Hooper, representing the machinery committee, and the other gentlemen mentioned in your notice.

As to the second point, the exact dimensions of the holes bored and time noted are as follows:—

Normandy Drill...1 7-16 in. dia., 10½ in. deep, in 2 min. 10 secs. Eclipse "...1½ in., 10½ in., 2 "... 25 "... Beaumont "...1½ in., ", 7½ in. ", 2 "... 30 "... We now have the block of granite here, and shall be happy to show it, and there is not a 1 in. hole in it as stated by "Purchaser," who, also, does not appear to be aware that our drill is less than half the price, and simplicity itself, as there are no valves and only one moving part to cause the rapid blows—viz., the piston itself.

Landon, Oct. 12.

A. Normandy, Stilwell, and Co.

THE ROCK-DRILL COMPETITION AT THE CARDIFF EXHIBITION.

EXHIBITION.

SIB,—Will you kindly allow me space to correct a misstatement which appeared in the letter of "A Purchaser" in last week's Journal. He states that the diameter of the hole bored by the Eclipse at the above competition was 1½ in., while that bored by the Normandy was only 1 in.; whereas the fact is they were precisely the same—1½ in. This I am positive of, having compared the holes bored at the time of the competition, and both the machines used there being now at our mines here for a practical trial, I have since had an opportunity of measuring the identical bits used by them at the trial. I agree that the competition at Cardiff was not a satisfactory test

opportunity of measuring the identical bits used by them at the trial. I agree that the competition at Cardiff was not a satisfactory test of the relative efficiency of the machines, as no official cognizance was taken of their sizes, the pressure of air under which such was worked, or the diameter of the holes bored (although the latter happened to be the same in each case); and the holes were so shallow that no test was afforded of any advantage that may have been possessed by either machine, in the length of feed, or convenience in changing the bits.

STEPHEN VIVIAN.

Mwyndy Mines, Llantrissant, Glamorganshire.

ANOMALIES OF THE MINING MARKET-EAST CHIVERTON.

ANOMALIES OF THE MINING MARKET—EAST CHIVERTON.

SIR,—"If advancement is desired it is well to have the public eye and to be in public favour." This was the happy position of a Welsh lead mine in the early part of 1876, when it was reported on the discovery of a fairly good bunch of ore that the great lode of the district had been struck, and the shares immediately rushed up from about 30s. to 22l. each on that report On prosecuting the discovery further, however, it was found that such report was not only premature but baseless, and the consequence was a rapid relapse. Now this advance was entirely due to the fact that the celebrated mine from which the name was taken was located at some distance to the from which the name was taken was located at some distance to the west, and the public had been kept well informed that the valuable lode ran through the sett. Whether it does or not no substantial proof of its existence has yet shown itself. It is to be hoped, however, that the shareholders may yet find the prize they have so perseveringly searched for, and that their expenditure may not be entirely fruitless.

fruitless.

As a parallel case of conducting mining operations adjoining a wealthy mine with the view of coming upon the same vein of wealth we have that of East Chiverton. Any of your old subscribers or readers of the Mining Journal will remember the palmy days of West Chiverton when it was turning out immense quantities of lead, employing hundreds of hands, and paying large dividends; in fact, some four years ago it was paying good dividends, and the shares were selling at 20L each. It has latterly fallen somewhat into disgrace in consequence of its necessities being something greater than its production, but I am confident this is only for a short time, as the last time I was at the mine there were indications of returning proslast time I was at the mine there were indications of returning pros-perity. But concerning East Chiverton. This mine was started while West Chiverton was at its zenith, and since then has kept plodding on in search of the riches which experts stated extended from West Chiverton into East Chiverton sett. These riches are now being brought to light with every stroke of the pick, and returns are being made now from the drivings alone sufficient to dispense with any further calls, and reserves are being laid open to provide for many years profitable working. It is now beyond question that the West Chiverton lode is struck and being driven on, and as depth is attained its richness will increase. Twelve months hence East Chiverton will be one of the great mines of Cornwall, and will not only maintain the name that West Chiverton made, but will, I believe, exceed it, as already the quality of the ore is much superior to that of West Chiverton, and the continuous improvement in depth shows an unlimited wealth in store.

But note the difference, and in this the enemalize of the mining

But note the difference-and in this the anomalies of the mining market is manifested. While the Welsh mine on the merest indica cast Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least Chiverton had risen in value in the same degree (which is more least chiverton had risen in value in the same degree (which is more least chiverton had risen in value in the same degree (which is more least chiverton had risen in value in the west of Grenville we come to the western tail of the Great Flat lode in Sexigns. To the west of Grenville we come to the western tail of the Great Flat lode in Sexigns. To the west of the

likely as not that they will see that figure before very long, but I do not anticipate until dividends have actually begun to be paid that much movement will be made in that direction. Most of the shareholders are I believe aware of the prize they have got, judging from the difficulty I had in obtaining a small increase to my previous holding about a fortnight ago. Certainly I could not obtain the shares at quoted prices. There is no doubt that East Chiverton will be the mine of 1822 be the mine of 1882. Oct. 12.

A SHAREHOLDER IN EAST CHIVERTON.

LEAD REPORT.

SIR,—Since our last the demand for lead has been good, and all available parcels have found ready buyers. The sale of about 700 tons of Greek lead is reported at 15t. 5s. This is considered a very good price. It used to be considered that rich Spanish lead was worth about 20s. to 25s. a ton more than Greek lead, but of late the quality of this lead is so improved, and also being richer in silver, that it has reached now and then the price of ordinary silver-lead. that it has reached now and then the price of ordinary silver-lead. One hundred tons of Linares lead sold at 151. 2s. 6d. here this week.

Newcastle-on-Tyne, Oct. 12.

STOCKS.

PREVENTION OF COLLIERY EXPLOSIONS.

PREVENTION OF COLLIERY EXPLOSIONS.

SIR,—So far the year 1881 has been passed over without any great colliery explosion, but the dangerous period is now approaching. From October to March is without doubt the period most prolific in those dire disasters. We may, however, hope that they will be averted, but so long as accumulations of gas occur in goafs and rise workings there is ground to fear that they will occur. The present system of working extensive mines in fiery seams by means of two shafts only renders the task very difficult of keeping them in all these parts clear of gas. A hard and fast line has been drawn at two shafts, and it cannot be too strongly urged that this is not good mine engineering. It is not scientific, and so long as the system is adhered to the safety of many mines must depend on a large ventilation and a very careful and strict use of the safety lamp. It is useless to ignore the fact that the materials for explosion are always present in many large collieries, and a sudden and great fall of the barometer may and does bring out explosive mixtures into return air courses, and in many cases into the working parts of the mine.

Additional shafts in many cases would not only add greatly to the safety of such mines, but would also ultimately enable them to be worked more economically. Of course economy must be considered, and the cost of such additional shafts would in some cases be great, but we contend that in many cases the cost would be annly repair.

but we contend that in many cases the cost would be amply repaid by the reduced cost resulting from the sinking of those shafts, as the length of the air ways would be greatly reduced and the working current expenses would be proportionally reduced. For many years the tendency has been to increase the extent of royalty worked by two shafts, and this has been carried to an extreme. It is time that some limit should be put to the extent of royalty worked by means

of two shafts.

The idea that the cost of sinking additional shafts would be so many thousands added to the capital account for which no returns would be got is quite illusory. The constant extension of the roadways and air ways in those mines add contantly to the cost of working, and as surely reduces the profits, until they vanish in many cases altogether. The most profitable coal mines are certainly those where the coal is worked to a reasonable distance from the shaft. The question is no doubt a very serious one, and it should in the interest of all concerned be deeply pondered.

Newcastle-on-Tyne, Oct. 10.

M. E.

TIN HILL MINING COMPANY.

SIR,—I shall be glad to hear from an independent source if it is true that the Tin Hill Company have erected the whole of the machinery and works and have commenced dressing tin within a year of starting? Such a rate of progress is seldom attained, and I for one can hardly believe in the display of so much energy pro bone publico. If it is a fact it is a proof that there are still some good honest workers in mining.

A CORNISHMAN.

Silvertoner Oct. 19 Silvertown, Oct. 12.

MINING IN CORNWALL-REDRUTH DISTRICT.

Silvertown, Oct. 12.

MINING IN CORNWALL—REDRUTH DISTRICT.

SIR,—A few remarks on what I recently observed in the mining district around Redruth may not be uninteresting to many of your readers now that public attention is being called to Cornish mining as an investment, seeing that the future of tin is more hopeful than for the past seven years. Starting from Redruth, on the new road south through the Pednandrea sett, which by the way has come again into the wilfe, and if reports circulated in the neighbourhood can be relied upon, is likely to eclipse its former career as a dividend property. Adjoining to the south is a new mine called Mount Carbis. A 30-in. pumping-engine has recently been erected. Judging from its position, being near the granite on the east and killas on the west, with the Great Flat lode, which for miles to the west is yielding hundreds of tons of tin per month, renders this mine a speculation of no ordinary character. Taking our departure from the Falmouth Road going through East Uny, in which mine they have recently discovered a good copper lode, yielding 3 tons per fathom. The object here is to get down to the riches of the Great Flat lode, referred to before. The next mine along our route, where energy and activity predominate over the deadness and despair of three years ago, is Wheal air-compressor engines have been crected. The pursuit here also has been and is at present at a greater depth the Great Flat lode. At at the 112 cross-cut north the lode was cut and a good many fathoms of tin ground have been opened east of cross-cut. The western end of the 112 not'yet being clear of the disturbed ground of the cross-cut and a good many fathoms of the 121 not'yet being clear of the disturbed ground of the cross-cut and an an activity prediction of at the 150, will shortly be driving north; two from Grace's shaft, one at the 137 and one at the 150, also north to intersect the same flat lode. The bottom, or 150 cross-cuts, will have but a short distance to drive, and will give backs of 250 tions of machinery and stamping power have been added since my last visit. Capt. Craze is showing an energy and determination to bring South Frances into the foremost place its position and rich lode warrants. West Frances is again enjoying the sunshine prenearly 60l. per fathor will enable the agents to meet the adventurers at the next meeting with more satisfaction than has usually

Wheal Grenville also is enjoying a brighter day, coming with a better price for tin a good profit will be shown at the next meeting. Extensive additions have been made to the tin floors, additional stamps heads added, and a large stone-breaker is feeding the 70 or 80 heads. A very compact tin floors will be shown here as soon as Capt. Hodge has completed his designs. To the west of Grenville Mr. Angove on taking the helm returned to the mode of working pursued by Capt. Vivian. The result is the Great Flat lode is found productive, and as soon as the drawing-engine and steam-stamps are productive, and as soon as the drawing-engine and steam-stamps are erected the manager hopes to make some profits for the adventurers. With the extreme end so far as I know of the Great Flat lode, for I am not aware it has been seen in the parish beyond. I turn my face to return by the north side of Carn Brea Hill, observations on which I receive for a further communication. which I reserve for a further communication.

MINING IN SOUTH WALES.

SIR,—We are glad to hear that the once spirited proprietor, Henry Gibson, of Gracechurch-street, is again embarking in mining. Knowing the country so well, being on the borders of Cardiganshire, where Sir Hugh Middleton raised over 2,000,000% of money, and gave to London her water supply, also one Campbell, who was enobled, and his descendants now Earl Camden, this gentleman is likely to follow in their wake. We all hope that his efforts may be crowned with the results that proved so successful in 1852.

LIONKER-ON.

GWENNAP MINES.

GWENNAP MINES.

SIR,—Your correspondents have called the attention of investors to the recent discovery of an extraordinary rich tin lode in Bell Vean Mine. The quality is unusually high in percentage, and if the lode be as large as it is rich the adventurers of Bell Vean as well as those of South Penstruthal may be congratulated. The end driving west, in which this rich tin is, is about 10 fathoms from South Penstruthal boundary. A cross-cut is being driven south from the South Penstruthal copper lode in the 30, or 60 fms. from surface, to intersect the same lode, and is now extended 40 fms., or within a few fathoms of cutting the said lode. The character of the ground in the cross-cut is all that could be desired for the production of mineral. By-the-bye, if any of your readers visiting Cornwall would pay a visit to South Penstruthal and examine the engines, which for cleanness, sweetness of working, arrangement of pumping would pay a visit to South Penstruthal and examine the engines, which for cleanness, sweetness of working, arrangement of pumping gear, &c., which cannot be excelled, they would be repaid their journey. I was pleased when there recently, and acting on my impression that if the neighbouring mine, Tresavean, were worth 50,000l, premium without a stick or an engine upon it, Stuth Penstruthal must be a neglected prize of no ordinary character. Seeing the water will now soon be out of the mines, and the great mundic lode reached, I have secured an interest in what will soon be thought a lucky hit.

Tourist.

A GOOD DISCOVERY IN THE MINERAL COURT TIN MINE.

A GOOD DISCOVERY IN THE MINERAL COURT TIN MINE.

SIR,—The miners in sinking a shaft at about the middle of the sett (which is a most extensive one, being about one mile and a-half in length) have cut into a rich tin lode from 8 to 10 feet wide, and are sending large rocks of very rich tin to the surface. They have since sunk shallow pits on the lode for 80 fathoms in length eastward, and find the lode large and rich for tin. This is not the rich lode that yielded such large quantities of tin in the Old Mineral Court, which is north of the present lode 40 fathoms, and is worth 50 lbs. of tin to the ton of lode stuff, and is to be opened at once. The ancient tinners found this large and productive lode as they sunk on it in places to a depth of from 5 to 6 fathoms, and have driven an adit over 150 fathoms, and there are only 50 fathoms more to drive when it will intersect the lode 25 fathoms deep, and thus lay open a mine in itself on this lode alone. The miners in the mine and also in the neighbourhood are anxious to take on tribute at 10s. in 1t. when once the stamps are erected; and there being several other lodes in the sett, and with all the advantages of such a deep adit, it is thought the Mineral Court will soon be a very valuable mine.

St. Austell, Oct. 14.

UNWELCOME REPORT—WEST PATELEY BRIDGE.

UNWELCOME REPORT—WEST PATELEY BRIDGE.

UNWELCOME REPORT—WEST PATELEY BRIDGE.

Sir,—My attention has been called to an article in a contemporary of Sept. 24, under the above heading. I am at a loss to know why the writer express himself so bitterly against a property with which he can have but little, if any, acquaintance. I have been connected with mines and mining properties for many years, and am pretty well acquainted with the Pateley Bridge mining district, but have no interest whatever in any of the mines there. I cannot help thinking, however, that the writer of the article referred to must be misled, and the only information he has to go by is simply an hour and a half's experience of a gentleman who appears to have no acquaintance with the district of Pateley, and who, with all due respect to his ability and experience, cannot give reliable information for anything he might see during that short time. I know the district well, and have visited it several times professionally, and confess I cannot come to the conclusion that he has, taking into account the productive appearance of the surrounding properties, 500 tons of lead having been got out of a very small compass in the West Pateley Bridge, to say the least of it, proves the ground to be orey; and I understand the present company raised 6000% worth of lead out of the same mine.

As to the East Craven Moor Mine, I should be serry to charge the

mine.

As to the East Craven Moor Mine, I should be sorry to charge the writer in your contemporary with unfairness, but seeing that this is a most promising property, which any man of mining experience will see before he is an hour on the spot; and it would be well before rushing into print to be guided by facts. The writer of the article referred to goes on to say—"Mining in Yorkshire, so far as the joint-stock companies known on the London markets are concerned, he much to assure for because of the lowest it has occared.

article referred to goes on to say—"Mining in Yorkshire, so far as the joint-stock companies known on the London markets are concerned, has much to answer for, because of the losses it has occasioned. Captain Waters knew all this, and he knew also that the Yorkshire lodes are almost proverbially uncertain in depth, hence he advices the shareholders of West Pateley Bridge to discontinue useless expenditure, and save what they can out of the fire." Now, it might appear from this statement that Capt. Waters went to Pateley Bridge with a full knowledge of the property, and a determination to give an unfavourable report. Surely Capt. Waters would not play fast and loose in this manner, and I think the article in question appears to be written in a spirit not altogether such as the writer of it would wish in his calm moments to appear in print.

Referring to the East Craven Moor Mine, I believe the shareholders have little cause to regret their connection with it. Having often to visit the district, I have a pretty good opportunity of learning enough to satisfy me that this will turn out a valuable property, and it has given sufficient evidence already to prove this. After seeing the article so severely commenting on the report of the meeting I took some trouble to ascertain the true facts of the case, and find that since 1879 650 tons of lead ore has been sold from this mine, and this raised by a small number of men. That the engine was only started last year. During my last visit to the district I was pleased to hear that they have now one of the finest courses of ore found in the district for many years past. It might appear from the article referred to that a mine must be condemned if it does not pay a dividend, forgetting that the productive lodes should help to develope the non-productive lodes, and much better do this than make calls on the shareholders. Much have been said about the lodes of the Pateley district not bearing in depth, but every mining man, or anyone acquainted with mining, and the hidden treas lodes of the Pateley district not bearing in depth, but every mining man, or anyone acquainted with mining, and the hidden treasures of nature, will know that all lodes, even the best ever known at home nature, will know that all lodes, even the best ever known at home or abroad, have their bearing in unproductive sections. Any unprejudiced mining man who will devote two or three days to this mineral ground, and examine the outcrops of the main lodes, as developed by the ancients, and the levels below, stage by stage, to the point in question, cannot but arrive at the conclusion that this is a property of the first importance. The lode in the present end is upwards of 7 ft, wide, showing good foot and hanging walls; its constituents are gossan, ferrugineous earth, limespar, sulphite of barytes, and two solid branches of lead ore from 8 to 12 in. wide, showing the best ore in the sole of the level, representing in size more the appearance of a coal seam than a lead vein. A cross-out is now being put in at an increased depth of 22 fms., and should it continue rich to that depth the shareholders may congratulate themselves upon having an interest in so valuable a property, which I consider beyond the risk of ordinary speculation. of ordinary speculation.

Of course no one can tell what is hidden underground, and all

mining is a speculation to some extent, but experienced miners will

know, or at least have a good idea, of what they are likely to produce from former experience. I give my opinion from appearance, both underground and surface, and shall be greatly disappointed if these mines do not turn out very productive.

T. DINEEN. Leeds, Oct. 13.

WHEAL JEWELL COPPER MINE.

WHEAL JEWELL COPPER MINE.

S1R,—In my statement of last week's Journal these shares were inadvertently quoted at 12s. 6d. to 18s. It should have been 12s. 6d. to 15s., being only about 9000l. for a mine nearly paying its way, with excellent prospects of becoming one of the richest copper mines in the western part of Cornwall. I find they will sample 120 tons of copper this month, being 266 tons for this four months, as against 103 tons for the last four months. I am one of those investors who look after low priced shares in mines well supplied with machinery, &c, where they are nearly paying costs, with every prospect of not only tecoming self-supporting in a very short time but profitable to the shareholder. Wheal Jewell shares are largely held by Cornishmen, and have been bought up the past week. Investors in mines should make enquiries about this property from some reliable Cornish channel. Now is the time to buy.

INVESTIGATOR. nel. Now is the time to buy. INVESTIGATOR.

WHEAL JANE.

WHEAL JANE.

SIR,—Shareholders in this property will be gratified to learn the prospects continue to improve, and the mine opening up well for tin. They are now raising 12 tons monthly, and at 56l. per ton this will realise 672l. (a profit). Increased sales are certain; in fact, the prospects are more cheering than for a long time past. The tin sold in September for one month, over nine tons, brought 556l. They lave now 9 tons of tin for "three" weeks working, which will no doubt realise as much. I find shares have been in great demand the past week, about 1500 having been bought up and gone into Cornwall, and they certainly look like going much better, and fulfilling Mr. Gould Sharp's prophecy of rising in value and resuming dividends during 1882, in spite of remarks made by a firm "that there was no market for the shares at any price." The price is now 17s. 6d. to 20s., and scarce. Many holders who were induced to sell through bad advice will have cause to regret their action. I find this mine has paid nearly 17,000l. in dividends, and I am informed the machinery, &c., cost 16,000l., and that they have all necessary appliances. The total outlay has only been about 18,000l. from first to last, and the mine now making profit. I am given to understand the next call may be 4s. or 5s. per share to clear off all liabilities, after which better times will come for this much abused, but well deserving, mine.—London. Oct. 14. after which better times will come for this much abused, but well deserving, mine.—London, Oct. 14.

INVESTIGATOR.

ANTIMONY MINING IN NORTH CORNWALL.

SIR,—I was on the mines yesterday. I have nothing to add to my report of this week of any improvement being met with, nor do we expect it until we have cleared and secured the south, which is very spare and troublesome, as we have to timber every inch of the way, as the ground is so congenial for the production of antimony. I could see the old adit the hanging wall side, but could not see it in the back of footwall side; but the men told me one or two legs is put down in wall side, and there is water in bottom of level. There was none when I was there last. I should think that the old men could have driven the adit, for that is my opinion; of course we cannot say for certain. We have men on the bank side going on for 2 town of autimony, and some of the receive over cent. we cannot say for certain. We have men on the bank side going on for 2 tons of antimony, and some of the rocks over 1 cwt., I should say, solid, that has been taken out from the old men's working. We have a large sett from 150 to 200 acres, and the present 1-vel can be driven for hundreds and hundreds of fathoms, and we know that there is another east and west lode that crosses over north and south two flelds above. I consider that we have a most valuable property. In conclusion, I might say the port of shipment is only a mile and a half, where we can get what is required, coals, timber, iron, and so on. That is one great advantage in mining.—Wadebridge, Oct. 13.

W. PAYNTER, Jun.

OLD SHEPHERDS MINES.

SIR,—I was much surprised to receive to-day a notice of a further call of 2s. 6d. per share on this mine. The more so as the Chairman at the meeting of shareholders, held in the beginning of August, said, in reply to a question, that after 10s. per share was called up 'I do not think you will hear much more of us in that respect." Now, it seems strange in the face of that statement that this call should be made. I consider some satisfactory explanation should be given to the sharcholders for the making of this call, as calls were only to be made when required. We find the directors have already received in cash from calls 28,750*L*, and I presume they have paid the vendor 13,500*L*, leaving a balance of 15,250*L*. Surely a sum far more than sufficient to pay all expenses up to date.

sufficient to pay all expenses up to date.

The directors took much credit to themselves for the great bargains they had got, when buying engines, &c., and for the economical way they were working the mines, &c. If that is the case, how is it that they were working the mines, &c. If that is the case, how is it that they now want other 55000. ? I hope some of the influential share holders resident in and near London will look into this matter.

Scotland, Oct. 11.

A SHAREHOLDER.

THE SHROPSHIRE LEAD MINES.

SIR,-What a fine and encouraging feature it is to all engaged in sit,—what a fine and encouraging feature it is to all engaged in mining here to find the mines continuing and increasing in richness as they are deepened. There are three mines here 250 fms. deep each of them, and the three are known to be rich in the bottom—these are the old Snail Beach, Tankerville, and the Bog. The two former are being worked now in the bottom, and Bog soon will be, for they are forking the water very successfully. I say what a splendid feature to find the beds of the rocks all just as nicely in order the lodes keeping their courses undisturbed and inspection; in order, the lodes keeping their courses undisturbed and increasing in size and value down to these great depths; and most of the mines here are very light watered, in fact some of the deepest and most extensively worked have not enough water for dressing purposes.

A Shropshire Miner.

WHEAL VOR DISTRICT.

-The revival of mining speculation in the parish of Breage she,—the revival of mining speculation in the parish of breage and its neighbourhood excites a hope that good days are coming for the population there. Several abandoned mines are, or are to be, resumed. Polladras Downs is said to be one of them; and I feel very confident that upon the removal of the water tin enough could be raised immediately to leave a profit upon the working. It was stopped by Wheal Vor Company about the year 1832. The lodes are about seven in number, each one of which would pay for working, as it did for several years—from about the year 1819 till the cessation, as aforesaid, and when tin was about half the present price.

New Great Wheal Vor is another mine holding out very good prospects of future success. Considering the shallowness of the coerce.

pects of future success. Considering the shallowness of the operations, the tinstone raised is remarkably rich. This sett (or part of it) was a portion of Great Wheal Vor United mines in 1831; but the company did not expend a penny upon it, because they had so many other good mines, yielding together a profit of 5000l. per month. During the tenure of the late (last) Wheal Vor Company their sett was more circumscribed, being only about 200 acres, whereas the company who ceased to work in 1844 held 1300 acres. embracing Penhale, Polladras, Wheal Vor, Wheal Vreah, Poldown, Carnmeal, Carleen, Chytodden, Wheal Sithney, &c.

Mount's Bay Consols, consisting of Pembro (30 years ago called Sonth Wheal Fortune), Sidney Cove (in 1851 a part of Sidney Godolphin mine), and another mine further west called Trebarvah. Of the prospects of these I am not prepared to speak, but I hope they will answer the expectations of the promoters.

Trueman's, or Central Wheal Vor, is about to be started, if I am correctly informed; also North Wheal Vor.

West Vor is at work under the management of Capt. Harris, a Highly-qualified mine agent, and the prospects are said to be good.

Great Work mine is the property of the mining king of Cornwall,
Capt. Wm. Teague, who is working it upon a small scale.

There are two mines in Breage which should be shunned as worthss-viz., Great Wheal Vor and Godolphin. Great Wheal Fortune is, I believe, to be worked with more energy

than hitherto.

Polrose, I am pleased to find, is considerably improved. I always had faith in that mine as a valuable property. I have known it and

the district about 70 years.

The advance in the price of tin will, I dare say, stimulate great activity in mining in Breage and other stanniferous districts. Truro, Oct. 13. R. SYMONS.

IRON AND STEEL INSTITUTE.

The autumn meeting of the members was held at the Institution of Civil Engineers, Great George-street, Westminster, on Tuesday and following days,—Mr. Josiah T. Smith, president, in the chair. Sir Henry Bessemer, F.R.S., and Dr. Siemens, F.R.S., president and vice-president respectively of the Local Reception Committee, having received the members, Mr. Smith thanked the Committee for their kind reception, and expressed the hope that before long the Iron and Steel Institute would have a hall of its own in the Metropolis wherein to hold its meetings. the Metropolis wherein to hold its meetings.

the Metropolis wherein to hold its meetings.

The first paper read was on the Manufacture of Bessemer Steel and Steel Rails in the United States, by Capt. W. R. Jones, of Edgar-Thomson Steelworks, Pennsylvania. This was supplementary to the author's paper read in May, and gave particulars of the operations carried on at the works mentioned during the first six months of the present year. In that period two converters produced 76,758 tops of lights, the largest present years. tons of ingots; the best 24 hours' work was 623 tons, the largest production in a single week was 3433 tons, and the best month's work was 14,033 tons. The tons are of 2240 lbs. in all instances. During was 14,033 tons. The tons are of 2240 lbs. in all instances. During the week ended Aug. 13 these works turned out 12,219 rails, of 574 lbs. per yard, making a total of 3101 tons, a remarkable total, which, he believed, represented the greatest production of rails that had ever yet been obtained in one mill, not even excepting that of the Cleve-land Steelworks of Bolckow, Vaughan, and Co. It had been said 3623 tons of the rails had been rolled in these latter works during the week ending May 21, but he understood that these rails were double-headers of 80 lbs. per yard, which would leave a large balance if the comparisons were properly carried out in favour of the American works. He was not, therefore, prepared to admit the claim that the English beat the Americans in the rolling rails. They expected still greater results before long, as soon as the three new steel converters now being erected at the works were got to work. With regard to the suggestion that the cost of production was greater in America, Capt. Jones pointed out that as most of the workmen were paid on a tonnage basis the cost could not be increased according to output, but was really lower in proportion to output, owing to the lower charges debited to interest and general expenses. On the Use of a Mechanical Agitator in the Manufacture of Bes-

semer Steel, by Mr. W. D. Allen, of Sheffield, was the next paper read. The author pointed out that the employment of Bessemer steel for many purposes for which the more expensive article crucible steel was at one time exclusively used renders it necessary not only that each charge of the steel should contain a given and known amount of carbon but also (and this is of paramount importance) that the carbon and manganese added to the converted metal at the end of the process should be diffused throughout the mass with the utmost regularity, so as to ensure the perfect homogenity of every portion of the charge. Every one who has witnessed the admixture of the highly carbonate and grant of the process and the state of the highly carbonated as a singularity of the charge. utmost regularity, so as to ensure the perfect homogenity of every portion of the charge. Every one who has witnessed the admixture of the highly carburetted spiegeleisen or ferro-manganese with wholly decarburised iron charged with oxygen will have noticed the violent ebullition and disengagement of gas which accompanies the act of pouring these two dissimilar metals together, and will, therefore, readily understand how this disengagement of gas continues, though less violently, so long as any portion of these metals remains in an imperfect state of admixture. This is a condition which but too frequently continues during the pouring and solidification of the metal, thus giving rise to the violent ebullition seen in the moulds whilst casting, and consequently to unsound and bubbly ingots, in addition to which veins or streaks of metal of different qualities and composition run in all directions through the mass, which, though invisible to the eye, become palpably manifest in the physical properties of the steel when employed for delicate purposes.

To overcome these difficulties it was decided to make trial of the mechanical agitator described in Mr. Allen's paper, and one was constructed at the works of the Henry Bessemer Company, and put into operation about three years ago. This is believed to be the first and only application that has yet been made of it. The mixing or stirring operation takes place in the ladle immediately before casting. The apparatus consists of a vertical spindle, having at its bottom end a socket. This spindle is supported in bearings, and is fixed at some convenient part of the pit where the ladle of steel can be brought by the ladle crane immediately beneath it. The spindle is driven by

the ladle crane immediately beneath it. The spindle is driven by bevel wheels and a horizontal shaft, the shaft being sufficiently long to remove any driving appliance from the heat, or any splashing that to remove any driving appliance from the heat, or any splashing that may take place. The agitator itself is simply an iron rod about $1\frac{1}{2}$ in. diameter, one end slightly tapered to fit easily into the socket, where it is held by a cotter, while the other end has a long slot punched in it, through which is inserted the blade or plate of iron, about 2 ft. long, 4 to 5 in. wide, and about $\frac{3}{8}$ in. thick. The blade, after insertion into the slot, is twisted at each end, so as to give it somewhat the form of a screw propeller blade. The rod and blade are coated over with loam or ganister, which has to be thoroughly dried, blacked, and carefully prepared. The taper end of the rod is then inserted into the socket, and cottered into its place ready for use.

The ladle of steel, immediately it is turned out of the vessel, is brought beneath the agitator, and raised by the hydraulic crane, immersing the blade and a portion of the rod in the steel. Rotatory motion of about 100 turns per minute is then given to it, the ladle being raised and lowered again during the operation to ensure all portions of the steel being operated upon. When the stirring is being raised and lowered again during the operation to ensure all portions of the steel being operated upon. When the stirring is deemed sufficient the ladle is lowered clear of the agitator, and the casting is proceeded with in the usual way. Nothing could work more satisfactorily than this apparatus has done since the time of its erection. Occluded gases are expelled in large quantities by the operation, ensuring an almost perfect degree of soundness and freedom from bubbles both in ingots and castings; the metal flowing into the moulds with a quietness supposed to be the exclusive characteristics of dead-melted crucible steel. Every ingot formed from the largest charges is now found by analysis to be perfectly uniform in temper and quality, while the thoroughly homogeneous quality of in temper and quality, while the thoroughly homogeneous quality of every part of the same ingot is evinced by its behaviour under the hammer or in the rolls, as well as in hardening and tempering. The stirring operation is found to to every simple in practice, causing no delay or inconvenience of any kind, and costing almost nil. This mixing process has been in constant use more than three years at the works of the Henry Bessemer Company, and every charge of steel made during that time has been stirred. In fact, in those works the stirring operation, is by all regarded as one of the most essential in stirring operation is by all regarded as one of the most essential in connection with the process, and no charge of steel would now be looked upon as reliable and in a fit condition for casting unless it had received this finishing touch

nad received this finishing touch.

Mr. G. J. SNELUS, of Workington, read a paper on the Distribution
of Elements in Steel Ingots. Some years ago Dr. Percy suggested
to him the desirability of ascertaining whether the spiegeleisen became thoroughly diffused in an ordinary Bessemer charge, and to test
the question he analysed the first and last ingot of a charge, and also the top and bottom of an ingot, and found no practical dif-ference in the composition of the steel at any point. In consequence of Mr. Stubbe's announcement at the last meeting of this Institute that he had discovered that "a redistribution of the elements took place during solidification, the carbon, sulphur, and phosphorus going to that part of the ingot which remained fluid the longest, so that the centre of the ingot became the most impure." Mr. Snelus re-

record Mr. Stubbs's undoubted right to the discovery of this most curious molecular interchange, and to award him the full credit for the same.

the same.

In the course of the discussion, which was taken on the two papers at once, Mr. D. Adamson, of Manchester, said that considering the question of getting rid of the various gases during the process had been so often discussed before he thought such a thorough exposition had not been given as might have been expected. According to Mr. Allen's paper it was clearly possible to get rid of the gases, but it had not been laid down that the result would be a thoroughly good and sound ingot. The conditions of casting gave rise to such but it had not been laid down that the result would be a thoroughly good and sound ingot. The conditions of casting gave rise to such creations of gas as could not be got rid of by mechanical agitation, and the use of the agitator would only result, in his opinion, in the production of a porous homogeneity, which had something like regularity of appearance, but was not perfectly solid. It was utterly impossible that when an ingot was cast under circumstances which gave rise to natural contraction it could be solid, and he believed they could never get a satisfactory ingot unless other means were adopted besides those of mechanical agitation.

Mr. Siemens said he had himself given attention to the subject

adopted besides those of mechanical agitation.

Mr. SIEMENS said he had himself given attention to the subject dealt with in Mr. Allen's paper, though he had never been bold enough to resort to Sir H. Bessemer's stirrer, from which undoubtedly good results had been obtained. The papers of Mr. Allen and Mr. Snelus were of great interest, and would direct the attention of steel manufacturers to points where great improvement might yet be looked for.

be looked for.

Mr. I. L. Bell suggested that some of the casualties that happened in the making of steel rails were possibly due to the evaporation of the chemical combination of substances forming the rail at different portions of jits length. He thought, however, that many more experiments and analyses should be made before they would be justified in drawing any general conclusions as to the effects of redistribution. He had himself called attention to the subject in a paper which had not been read, but had been printed in the Transactions of the Institute. Among other results of experiments he had made was a discovery of the fact that it was not necessary the metal should be in a state of fluidity for redistribution of the elements to take place. to take place

Professor Abel, of the Woolwich Arsenal, while admitting the importance of conducting a careful enquiry into the matter, said his own experience was in corroboration of the results of the experiown experience was in corroboration or the results of the experiments made by Mr. Snelus. Among other facts he mentioned the appearance of warty excrescences on some solid shot hastily cast during the Crimean war which proved to be sulphide of iron that had been liquated, and finally ejected by the iron. The differences in the fusibility of phosphides and sulphides might have an important bearing upon the subject.

Mr. E. Riley gave the result of some analyses, but the former

ortant bearing upon the subject.

Mr. E. RILEY gave the result of some analyses, but the figures were incomprehensible, and Sir Henry Bessemer explained the present method of making crucible steel at Sheffield, showing that it was often an almost worthless product.

was often an almost worthless product.

A Note on Current Dephosphorising Practice, by Messrs. S. G. Thomas and P. C. Gilchrist was next read. It was remarked that it being now just three years since the first detailed communication on the subject of the technical possibility of a complete and direct dephosphorisation being effected in the Bessemer and Siemens processes was offered to the Institute, and nearly two years since the first working on a large scale was commenced, it has been intimated that it would be interesting to many members to know in what position the matter now stands. The more strictly scientific aspects of the question having been already treated of at various times, it is only proposed at present to give a very brief resume of the technical results obtained at some of the leading dephosphorising works, with the view of affording members the necessary data for drawing their own conclusions as to the technical and economical status of the deown conclusions as to the technical and economical status of the de-phosphorising process, and giving some materials for forming a judg-ment on the relative advantages of manufacturing iron by the fluid or ingot processes as compared with the puddling or piling process. The data here given are based on the results obtained in the present current manufacture of dephosphorised steel, which amounts to between 27,000 and 29,000 tons a month. It may be added that the make for November, and probably for October, will considerably exceed 30,000 tons, or (say) at the rate of 360,000 tons a year; while in the course of the next few months 12 more converters, now nearly finished, will come into operation, bringing the yearly make up to considerably over 500,000 tons. With regard to the question of production, it may be noticed—1. That at present in the modified Bessemer process the production of steel per lining is considerably less than in the old process, and that, therefore, the vessel plant, or the facilities for changing the vessel, should be increased for a given make.—2. That the make per unit of blowing and hydraulic engine-power (and in consequence per unit of boiler and crane capacity) is substantially the same for both processes, and that, therefore, no increase in engine, boiler, or crane power is required for the dephosphorising Bessemer process. As an illustration of the actual present productive capacity of old works modified for the new process, it may be mentioned that there are now at work in Germany two three-vessel basic pits, each regularly turning out 24 or more charges per in the course of the next few months 12 more converters, now nearly may be mentioned that there are now at work in Germany two threevessel basic pits, each regularly turning out 24 or more charges per 24 hours, which probably equals the full average of English practice with two-vessel hematite pits. This is the more remarkable as one at least of these pits is a very old and contracted two-vessel pit into which a third vessel has been squeezed. At another German works, with an old two-vessel basic pit, which works on day turn only, the average basic output is 11 charges in the 12 hours, while at a fourth works with an old two-vessel pit, 22 casts are regularly obtained per 24 hours. The durability of linings and of bottoms is greater with the basic than with the acid process, and as to the quality of the 24 hours. The durability of linings and of bottoms is greater with the basic than with the acid process, and as to the quality of the steel produced, the rapid extension of its employment for every purpose for which Bessemer steel has ever been used (excepting, perhaps, the manufacture of Bessemer tool-steel) is the best evidence. haps, the manufacture of Bessemer tool-steel) is the best evidence. That dephosphorised steel is even superior to hematite steel for certain purposes, such as boiler and other plates and wire, is now pretty well agreed. The total number of converters at present regularly working on phosphoric iron is 36, of which, however, eight or nine are of less than 4 tons capacity. Thirty more converters specially designed for the process are now under construction. Several Siemens furnaces have been in work for some time, but details of their operations must be recorded for the present

furnaces have been in work for some time, but details of their operations must be reserved for the present.

On Tuesday evening the members of the Iron and Steel Institute were entertained by the Lord Mayor at the Mansion House, and in concluding an interesting response to the toast of "the Houses of Lords and Commons," Earl GRANVILLE, K.G., said: My opinions are of no importance, except in so much as my being connected with the Government, and I was converted or rather I came to believe in the converse of the reserved by the converse of the reserved and for the reserved and for the reserved for the re Free Trade by reading Adam Smith as a boy, between 40 and 50 years ago, when I voted against my own party in favour of Free Trade, and since that day my own opinion has been confirmed year by year—that no Government can bestow a greater boon upon a country—whether it is old, rich, and strong, or young, poor, and weak—than to bestow upon it absolute commercial freedom. (Hear, bear) I allyded just now to the small profits which have been dehear.) I alluded just now to the small profits which have been derived by the iron trade of late years. I believe that a better prospect is opening to us, and so much do I believe it that I am a little afraid at this moment of our going too fast rather than of our going too slow. Not going further back, though I might do so, I have a painful recollection of the evils and the ruin which the "leaps and bounds" of 1873, deprecated at that time by Mr. Gladstone, brought in their 1873, deprecated at that time by Mr. Gladstone, brought in their train; and only two years ago we cannot forget what was called the American "boom." It was very pleasant at that time in my part of the world, for immediately the price of coals was raised the demand increased. Then the speculators rushed in with that energy that they always show in a rising market, and the result was an almost complete collapse in two months time. I trust we shall be moderate this time. I believe we are perfectly instified in thinking that the degoing to that part of the ingot which remained fluid the longest, so that the centre of the ingot became the most impure." Mr. Snelus repeated his experiments, and gave the results in the present paper. These further analyses confirm in a remarkable manner those previously obtained by Mr. Stubbs. The redistribution undoubtedly takes place, but it does not appear to affect ordinary plate and rail ingots to any practical extent; but Mr. Snelus wished to place on

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gold was first discovered in Australia. There are about 100 distinct gold fields. Along the course of some of the main rivers have been discovered large areas of auriferous deposits—notably the Shoalhaven, Cudgegong, Turon, Macquarie, Mudgee, Abercrombie, Meroo, Lachlan, Darling, and Clarence rivers. Along the course of some of these rivers I have inspected immense tracts of rich alluvial deposits, but for want of machinery and water for sluicing it cannot be worked to advantage. In one place payable wash-dirt was proved to exist for about 20 miles in length, by a great breadth and depth, capable of affording profitable employment to thousands of miners for many years by the judicious outlay of a moderate capital in bringing a plentiful supply of water for sluicing, and the erection of machinery for crushing purposes. It would be difficult to give any estimate of the vast quantity of matrix available for immediate operations on this special tract of country; but without doubt it is the ancient river-bed or water-course, which at one time drained a large portion of the castern watershed of the colony, and now lies from 500 to 1000 ft. above the level of the present river. It runs parallel with the Shoalhaven River, and extends for many miles above and below the tract of country I prospected, and which I believe will prove to be a very rich gold field when effectively worked. At the Kiandra yold field there has been lately discovered an immense area of alluvial deposits with great depth of wash-dirt; but this, like many other rich districts, only wants a judicious expenditure of capital in the construction of reproductive works, such as water-races, reservoirs, &c. The following are the proclaimed gold fields:—

North.

Appletree Flat. Peel River. Tooloom Creek.

of rivers and creeks, are to be found in a great number of places, which, although known to be payable, and indeed much of it known to be rich, remain at the present time undeveloped and unworked. The reason of this is chiefly that the individual miner, however suitable he may be to prospect, and in many instances to efficiently develope new auriferous ground, has not generally the means for extensive undertakings and works as are required to extract the precious metal in payable quantities where the ground or which he presented. cital in payable quantities where the ground on which he operates as been previously worked, and the cream, so to speak, taken from . The introduction on older partially worked ground of costly pump-

effect on the market for the moment. What I feel convinced is that if we keep our heads cool, if we are not in too great haste in raising prices, we shall see a long spell of prosperity to this trade, which I neep will be as fully enjoyed by those distinguished rivals who are here to-day, and who have come perhaps to learn a little, but I hope to teach us much.

On Wednesday papers were read on the Metallurgy and Manufacture of Modern British Ordnance, by Col. Maitland, the superintendent of the Royal Gun Factory at Woolwich; On the Application of Wrought Iron and Steel to the Manufacture of Gun Carriages, by Mr. H. G. Butter, C.E., of the Royal Arsenal, Woolwich; On the Application of Solid Steel to Small Arms, Projectiles, and Ordnance Manufacture, by Mr. F. Gautier; and On the Manufacture of Projectiles. The papers were followed by a discussion, in which Dr. Siemens and Sir H. Bessemer pointed out the dishonest and unjust treatment to which inventors were subjected by the Government.

OUR GOLD SUPPLY—ITS EFFECTS ON FINANCE, TRADE, COMMERCE, AND INDUSTRIES—No. V.

By THOMAS CORNISH, Mining Engineer (late of Australia).

Author of "Gold Mining, its Results and its Requirements,"

NEW SOUTH WALES.

Gold mining in this colony may be termed as scarcely emerged from its infant stage. The approximate area of auriferous country is now estimated at about 35,500 square miles, and the total production of gold about forty millions sterling. It was in this colony at Ophing gold was first discovered in Australia. There are about 100 distinct gold fields. Along the course of some of the main rivers have been discovered large areas of auriferous deposits—notably the Shoalhaven, Cadegoong, Turon, Macquarie, Mudgee, Abercrombie, Merco, Lachlan, Darling, and Clarence rivers. Along the course of some of these givers I have inspected immens tracts of this alluvial deposits.

(We are requested by the writer of these articles to state that all author's live and the course of some tracts of rich alluvial deposits.

[We are requested by the writer of these articles to state that all author's rights are reserved.]

HOW TO CHEAPLY PREVENT ACCIDENTS UPON BREAKING INTO OLD WORKINGS-No. III.

13.—Thus we arrive at how these figures act nationally not for one colliery only but equally well for all, as well as between all coal or metal working in the United Kingdom, directly their adjoining plans are seen. Any districts 2s. 6d. Ordnance Map shows the exact altitude of all its Bench Marks or B.M.'s, where these are cut (a A surmounted by a horizontal line) with a chisel upon their rumerous permanent objects, such as mile posts or buildings of the in every town manent objects, such as mile posts or buildings often in every town or village, and along every mile of public road in the whole kingdom. They are all denoted in feet and decimals thus—B.M. 103·5—above mean spring tide at Liverpool, which is all Ordnance levels, universal zero or datum, and is commonly expressed by the initials O.D. These maps, therefore, bring the exact difference between this datum, O.D., and any workings to our doors; if all concerned then only use them.

be a very rich gold field when effectively worked. At the Kindrag old field there has been lately discovered an immers area of alliary and the secondary of the problems of th

all such things being quite neglected, as they are as now. If, therefore, the few principles now shown up be only universally used they will plainly give far more trusty and far more useful plans for every practical purpose, and will also enable us all to far more amply provide for many different facts and contingencies that now cause there accidents quite beyond us altogether; besides making all such contingencies and facts then known whenever required, removing all the main misleading features of such plans as now, and eliminating all our present difficulties as to any existing boundary faults altogether; because, whether such faults are proved or unproved, known or unit. The introduction on oldor partially worked ground of costly pumping machinery to keep wet claims dry, extensive races or water courses to bring water to said ground, and machinery for hauling, crushing, and puddling, would in a great number of instances, if available to the practical miner, vastly tend to increase our national wealth, and give emyloyment to a greatly increased population. From the rough and imperfect mode in which the gold mines of the country have hitherto been worked (partially attributable to new rushes taking the miners away from their claims before they had been thoroughly tried, and partly to the want at the time of knowledge of mining and the absence of proper appliances) there are great quantities of old workings, which will, we believe, yield a rich harvest when the capitalist can be enticed to lend his helping hand to their development. In what may be termed new or unprospected ground our observa-

accidents, which all concerned commonly swear are both unknown and quite unascertainable; too, as now, and doing so, too; before such faults are cut, and so before these accidents are caused at all, as they are now year after year, provided only gross or careless neglect of what is now shown be avoided hereafter, such plainly doing this anywhere by a few hours extra levelling.

16.—Nay, we may say with less labour and daily cost even than is incurred now as a general rule at all, for a few great economies can be usually effected in them. Take, for a first example, the labour, now too dommonly involved in levelling mining workings by spirit level and staff, while this can be always accurately done in a meré

now too commonly involved in levelling mining workings by spirit level and staff, while this can be always accurately done in a mere fraction of the time by any levelling instrument having a good vertical arc and verniers as follows:—Adjust any such instrument, and read its exact height up the staff where it is required to start. With the staff on our starting point, read the exact angle this height makes with the verniers; do this also at the foresight, keeping the instru-ment in adjustment and level. Note these angles; as e for elevation better the berign and d for development below it weekers their region. ment in adjustment and level. Note these angles as σ for elevation above the horizon, and d for depression below it, measure their points horizontal distances, or get them from the plans, as in ordinary leveling. Then, with the staff at the foresight, remove the instrument readjust it wherever next required, and read its height then up the staff. At this height the angle at the back sight will always read the last foresights angle $\pm 90^{\circ}$ if correctly done and read. Which, therefore, checks every set of sights as we go similarly on from end to end of any such work. These levels are reduced out with mathematical tables, like ordinary levels, or as follows, for example

or no, since another system is already applied to the or all the universal or metric system. Why not, therefore, with or without the metric measures at least, eliminate confusion once for all by simply expressing all plans scales in the universal fraction of their real sizes. Thus, say, two chain per inch—1 ÷ 1584, or else scald 1 ÷ 1584 of everything real or natural size, and so on. For the simple consequence is that all these engineering professions can then at sight or will measure any plans whatever by one universal scale alone. If divided into inches and decimals, then all the plans in the universe are shown by it as inches long; if feet, all plan dimensions are in feet, and if yards, similarly divided, all plan dimensions are expressed by it in yards and decimals, while if all three be cut upon one pocket or office standard scale, then this one scale acts for all scales used, or nearly so, as now, at once, or does so, at least, for all picket scales. For example, a plan scale is 1 ÷ 120, something needed, measures 1 if on it, then it is 1 × 120 = 120 in, long—in fact, by the foot scale this is 12 ÷ 120 = 10 ft., or 120 × 1 of a foot scale = 12 in., and so on. If another plans object measures 3 in. on a plan, whose scale is 1 ÷ 2376, then this really is 3 × 2376 in. = 2376 ÷ 4 = 2376 × 3 ÷ 792 = 9 chains, or 7128 links long, which acts always or most frequently with or without the metric measures at all, let our measures be what they may now, or come to whatever they like hereafter, besides eliminating all future misunderstanding, since any units on the plan when multiplied by its scales, universal fraction equally gives their real units upon the ground.

In summing up the foregoing manifest results, the following will commend themselves to the notice of those concerned:—All see why these particular accidents have not been better prevented before, while they also come to know how to eliminate from their plans present misleading data and inaccuracies. Anyone concerned can get and give on their plans alone a

is paid as a general rule. Therefore, how the loss of life, limb, and property now too often arising from these particular accidents, as well as their hazard and ensuing legal and financial liabilities to owners, managers, and workmen alike, can be turned into such comparative safety and gain as enables all concerned to far better avoid them all than they have done hitherto will be plain enough to all concerned upon a little consideration of what has now been shortly shown, and despite any Employers Liability Acts either of the present of the fathers. sent or the future. Sooner or later such must surely, then, commend themselves to us all, with all respect, too, to all highly concerned, as well as to any comparatively few exceptions to what is here shown

ERRATA IN No. 2.—In paragraph 9, at end for spart read spirit, and for amply reads simply. In paragraph 10, line 5 down, for these read the; line 23 down, for neglecting read neglected; line 26, for the first any read they erasing being. Line 31, read enlarge for enlarged, and line 55 for which read such; last line, read this for truth. In paragraph 11, line 8 down for now read none, and line 12 read however for moreover. In paragraph 12, line 10, read water and gases; line 13, read w² = 2 gh; line 21, read 5:15 \(\psi\$ h\$\frac{1}{2}\$, and line 22 read 2:14 \(\psi\$ h\$\frac{1}{2}\$; line 35, read altitudes for arguments, and line 40 good for gus; line 45, for along read all, and line 50 for 322.0 read 302.0.

ASTON STEAMSHIP COMPANY, ASTON HALL COAL AND BRICK MAPANY.—Petitions for winding-up have been presented to the High Court of stice.

Zectures on Bractical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES-No. CLXXXI.*

BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.,

Mining Engineer, Wakefield.

(Formerly Student at the Royal Bergakademie, Clausthal.)

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Where the conveyance is performed by men or horses the rails are simply placed end to end, and nailed independently to the sleeper. To allow for longitudinal extension, due to changes of temperature, it is usual to leave \(\frac{1}{6}\) in. space between the ends of the rails, and for the same reason the holes in the rails for the bolts fastening the fish plates are made oval. The sleepers are usually 3 in. thick and 4 in. wide. Those at the junction of the rails are 4 in. thick and 6 in. wide. The sleepers are placed 20 in. to 28 in. apart. Lottner gives the following dimensions for Vignol rails used in the Saarbrucken Collieries.—The heaviest section which is most rarely used in the wide. The sleepers are placed 20 in, to 28 in, apart. Lottner gives the following dimensions for Vignol rails used in the Saarbrucken Collieries:—The heaviest section, which is most rarely used, is $1\frac{1}{2}$ in, broad across the top, $2\frac{1}{3}$ in, broad across the top, $2\frac{1}{3}$ in, broad across the top, $2\frac{1}{3}$ in, wide at the foot, 3 in, high, and 7-16ths in, thick, and weighs 24 lbs. per yard. The smallest and most generally used section is $1\frac{1}{4}$ in, broad across the top, $2\frac{1}{3}$ in, wide at the foot, 3 in, high, and 5-16ths in, thick, and weighs 24 lbs. per yard. The smallest and most generally used section is $1\frac{1}{4}$ -16th in, broad across the top, $2\frac{1}{3}$ in, wide at the foot, 3 in, high, and 5-16ths in, thick, and weighs 19 lbs. per yard. The height is about 30 per cent. greater than is usual elsewhere.

Bridge rails, or rails with an inverted 1 section, are very common in the collieries in the North of England. They are $1\frac{1}{2}$ in, high, $3\frac{1}{2}$ in, broad across the foot, and $1\frac{1}{2}$ in, broad on the top, and are fastened to 4-in, thick sleepers. The weight is about 22 lbs. per yard. On account of the greater breadth of the foot they rest more firmly on the sleepers than the Vignolles rails.

on the sleepers than the Vignolles rails.

In many districts on the Continent, where wood is comparatively cheap, longitudinal bearers for the rails, resting on cross sleepers, are used. In these cases the rails generally have an L section, from 2 to 2½ in. broad, and ½ to ¾ in. thick, or are formed merely of flat bars. In a few places the rails rest directly on broad planks, and

the latter are carried on cross sleepers.

Steel rails of double headed or the Vignolles section have lately come into use in collicries both in England and on the Continent, manufactured from low priced cast or Bessemer steel. For equal strength these rails may be made 40 per cent. lighter than rolled rails, and wear five times as long. For equal lengths they are slightly

dearer than iron rails.

dearer than iron rails.

More recently the attempt has been made to use iron sleepers. They have been made both of east-iron and wrought-iron, and with and without chairs. Sometimes a recess is formed in the sleeper to receive the foot of the rail, the latter being wedged in the recess; and at other times cast-iron chairs have been bolted or rivetted to the wrought-iron sleepers. At the Penrhyn Quarries, in North Wales, the rails are formed of 1½ in. round iron bars, 12 to 14 ft. long, the ends being bent downwards at right angles. The sleepers are made of cast-iron, the ends of them being widened out, so as to be oval in plan. Each end has two circular holes, into which the bent ends of two adjoining rails fit. The rail is supported between the sleepers by slate slabs. The advantages of roadways formed entirely of iron by state since. The advantages of roadways formed entrely of iron are principally that the roadways can be more quickly put down or taken up, and that they last much longer. It is sometimes usual to place a strip of wood between the iron rail and iron sleeper, which diminishes the vibration so liable to loosen the fastening between the rail and sleeper.

In the Clausthal mines stone sleepers are sometimes used. Holes In the Claustian mines stone steepers are sometimes used. Holes are bored in the stone, into which wooden plugs are driven. The rails are nailed to the latter. A stone sleeper will require no repairs, except the insertion of fresh plugs as the old ones decay. Their use presupposes the presence of suitable stone in the mine. The roadway requires more time and labour in laying than when either

wooden or iron sleepers are used.

wooden or iron sleepers are used.

In order to prevent any liability of the wheels becoming jammed between the rails it is usual to make the distance between the outsides of the wheel flanges \(\frac{1}{2} \) in wider than the distance between the insides of the rails. It is also usual to make the breadth of the wheel rim \(\frac{1}{4} \) in greater than the top of the rail, so that when the flange of one wheel rubs against the inside of one of the rails the outside edge of the rim of the opposite wheel still projects \(\frac{1}{4} \) in beyond the outer edge of the opposite rail. In the case of curves the distance between the inner edges of the rails is made \(\frac{1}{4} \) in, larger than where the rails are straight.

where the rails are straight. In passing round curves the flange of the first outside wheel constantly rubs against the inside of the rail, and tends to mount it This inconvenience is the greater the less the radius of the curve and the greater the distance between the axles, so that it is best to make the radius of the curve as great as possible, and to lessen the distance between the axles. On railways at the surface the outer will be always as much higher than the inner rail that the general distance between the axles. On railways at the surface the outer rail is always so much higher than the inner rail that the components of the weight of the wagon parallel to the plane of the surface of the rails is equal to the centrifugal force, plus the friction between the rim of the wheels and the top of the rails. For curves underground it is usual to make the difference in height from $\frac{3}{4}$ in. to $\frac{1}{4}$ in., and to make the wheels loose on the axle, so that they have some play parallel to the axle, or still better to make the axle loose on its bearing, so that the axle has the same play in the same direction. When wheels, however, are fixed to the axle some slipping with one or both wheels must take place when passing round curves, since the distance to be passed over by the wheel on the inner rail is less than that traversed by the wheel on the outer rail. This slipping, which requires increased tractive force, is avoided by making the which requires increased tractive force, is avoided by making the wheels loose on the axle. Loose wheels, however, wear away too rapidly in the sockets, and hence other means are preferable. The rim of the wheels are made conical, so that when the wagon passes from a straight portion on to a curve, or in passing round a curve, the outer wheel runs on a larger diameter than the inner. This arrangement is advantageous also for the straight portion of the arrangement is advantageous also for the straight portion of the roadway, as it tends to keep the wheel flanges at exactly the same distance on both sides from the rails, and thus to prevent the flanges from rubbing against the rails. The rubbing of the flanges against the rails cannot, however, even theoretically, be avoided when passing round curves, since the axles of both pair of wheels are always parallel, and hence the apex of both cones supposed to touch the tread circles of the outer and inner wheels cannot both coincide with the centre about which the rails are curved. This defect is entirely the centre about which the rails are curved. This defect is entirely obviated by allowing the front axle to rotate about a vertical pin. Such an arrangement is, however, too complicated for pit corres. Slipping when going round curves is obviated by giving to each wheel a separate axle, an arrangement very usual on the Continent. Von Hauer proposes, as a still better arrangement, to use loose axles, one feer each sair of the wheels. ch axle to have one of the w pair of wheels, but on each axie to have one or the wheels.
That is each wagon to have two loose and two fixed wheels,
I crosswise. Since the loose wheel rotates in the same diarranged crosswise rection as the axle, there will be no rotation of the wheel relative to the axle, except in passing round curves, and consequently wear is reduced to a minimum. The proposal to make all four wheels loose on two loose axles has been found in practice to result in a great wear, since the wheels rotated more readily about the axles than the wear, since the wheels rotated more readily about the axles than the latter in their bearings, and consequently in practice equivalent to four loose wheels on two fixed axles.

If the inclination of the rim of conical wheels is made too sharp the disadvantage is entailed that the wheels act as a wedge to press the rails asunder, or cant them over. On this account it is advisable to make the centre portion of the trend of the wheel perfectly cylindrical, and to give the inclination (conical form) to the outer edge of the rim, and the portion of the rim next the flange. The rubbing of the flange against the rail may be avoided by making the inner edge of the flange to incline from the rail. When conical wheels are used the top of the rail must be rounded off near the edges, or better still both rails inclined somewhat inwards. better still both rails inclined somewhat inwards.

In connection with the meeting of lines of rails Von Hauer,* distinguishes three cases.—1. When the lines of rails simply cross each other without the corf passing from one set of rails to the other, which may be distinguished as crossings.—2. When the rails meet, so that the corf can be directed from one line of rails to another, the two curves of the rails having a common tangent where they meet. -3. Junctions: When the rails join not tangentially, but under a very considerable angle.

In the case of crossings, where the rails meet at a considerable

angle, the crossing is formed by cutting out at those parts of the rails which would be struck by the flange so much of the rails as will allow of the flange of the wheel to pass.

allow of the liange of the wheel to pass.

When the rails cross at an acute angle it is necessary to provide check rails; these, however, are of very little use in the case of crossings with a very sharp angle, and the corf may then readily get off the road, in spite of the check rails. It is, therefore, advisable to avoid sharp crossings, and they are in practice very rarely required underground.

With regard to junctions two principal conditions may be noticed. The first when the corves are pushed by men or drawn by horses, so that the corf may be directed by hand in one direction or the other. The second when a train of corves are drawn by a rope in which no deviation by the pulling force or by an attendant is possible. In the first case all the rails can be fixed, and a portion of the rails cut out, to allow for the passage of the wheel flange, as we have described in the case of crossings. In the case of pass-byes, where the radius of the curve of the rails at the joints is very small it will suffice to cut the curve of the rails at the joints is very small it will suffice to cut the rails to suit; but where a branch road runs into a main road at a very sharp angle it is most advisable where the two inner rails cross to have the heart piece cast, and likewise where the inner rails meet the outer rails to have the junctions made of cast-iron. By this means where the rails form sharp points the corf may be made to run on the flanges of the wheels; the height of the rails in the cast plates greatly diminishing towards the points to less than the depth of the flanges. In some of the German collicries the junctions at the ends of pass-byes are formed entirely of plates, with the rails cast on them, the height being less than the depth of the flanges, rails east on them, the height being less than the depth of the flanges, so that the corves run on the flanges of the wheels. The intermediate rails are then entirely left out. This last arrangement supposes that the corf can be directed by hand in one direction or the other. In the best regulated collieries the corves are always directed in one direction (to the left) when sent on to a pass-bye or double line of rails, and the left hand junction plate is cast so as to leave an opening between the rails for the flange of the wheel, whilst the right hand junction plate is cast with a groove, which at the approach end is deeper than the flange of the wheel, gradually diminishing to the opposite end, where the depth is only about one-fourth the depth of the flange.

The last arrangement is also usual in the case of pass-byes when

the corf is drawn by a rope by means of engine power. When engine power and a rope are used, and the corves are directed some-times into a branch road and sometimes forward on the main road, times into a branch road and sometimes forward on the main road, movable points or switches are necessary. Points or switches may be classed as opened or closed. In the former the end rails of the main lines next the junction are movable, and the ends of the rails where the line becomes double are placed at least so far apart that the flanges of the wheels can pass readily between them. The loose ends of the movable rails or tongues are cut off square, as well as the ends of the fixed rails meeting them. The loose ends rest and slide upon a bed-plate, to which also the adjoining ends of the next rails are firmly fixed. Open switches have the advantage that one switch may be made to serve two branch lines starting off from the main line on opposite sides, and they do not require to be cleaned out so line on opposite sides, and they do not require to be cleaned out so often as the closed switches. They have the disadvantage, however, that if they are not moved exactly into position the corves are thrown off the road. In closed points the outside rails (i.e., the right hand rail of the main road and the left hand rail of the branch road if the latter turn off to the left, or the left hand rail of the main road and right hand rail of the main road and right hand rail of the partner brad if the latter turn off to the left, or the left hand rail of the main road and right hand rail of the branch road if the latter turn off the branch road if the latter turn of the branch road in the latter turn of the latte road if the latter turn off to the left, or the left hand rail of the main road and right hand rail of the branch road if the latter branch off to the right) run continuously into the rails of the main road, whilst the end rails of the intermediate rails are movable, forming the tongues. The two tongue rails should be connected together at the loose ends to keep them the proper distance apart, and are hinged at the opposite ends. Sometimes the pins on which they are centred are fixed to the tongues, the socket being formed in the cast-iron sleeper or chair, and sometimes the pins are fixed to the sleeper and the socket formed in the tongue. The former is preferable. The loose ends of the tongues are prevented from being pushed too far by stops.

THE ROBEY ELECTRIC LIGHT ENGINE.

connection with electric illumination the name of Messrs In connection with electric minimation the name of acessrs, Robey and Co., of Lincoln, is perhaps the best known as manufacturers of engines for giving motion to the generators, many of the most successful of the applications of the electric light having been made by their aid; and it seems that they have well maintained their high reputation at the Electric Light Exhibition now going on at the Palais de l'Industrie at Paris. Their stand adjoins that of the Anglo-American Brush Electric Light Corporation, and is by far the finest display of steam pawer in the huilding. They are in fact the finest display of steam power in the building. They are in fact united by a line of intermediate shafting, placed on columns about 12 ft. from the ground, which transmits the power from the engines to two long rows of brush dynamo electric machines. When the whole of the engines and machines are in uniform motion, and profusely lighted up by the Brush are light, the effect produced by this simple arrangement is very striking.

simple arrangement is very striking.

All the engines are of the same type, the well known patent Robey Engine. They are seven in 'number, varying in size from 10 to 40 horse-power nominal, and capable of giving, say, an aggregate effective power of about 250 horses. The 40-horse power engine is at present driving about 40 are lights, and after careful experiments, extending over the usual evening run of three hours, it is found that the variation from the nominal speed does not exceed one revolution during the whole of this time; this result being mainly due to the special combination of automatic governor and equilibrium valve used on these engines when employed for electric lighting.

The first three engines in the line of seven are driving on to one length of shafting, the result being that any variation in one engine is absorbed by the other two; an almost perfect speed is thus ob-tained. In order to clearly illustrate the action which takes place, et us suppose that the three engines are running at full speed under their usual load; then by slightly turning a nut on the governor spindle the work done by any one engine may be doubled; the result being not to increase the speed of the shafting, but to halve the work done by the other two engines, so that the total amount of the work done remains the same. If, for instance, the three engines are indicating 10-horse power each, then by adjusting the governor of the centre engine until a diagram indicates 20-horse power it will be found on applying the indicator to the other engines that they are indicating only 5-horse power each, the total power remain-

There are two great advantages in this arrangement, the first being that any slight variation is immediately absorbed, and amounts in fact merely to a tendency to variation; the second being that in the event of an accident to the governor, causing the full boiler pressure to be thrown on to the engine the speed of the shafting remains

onstant. These two points secure absolute speed and absolute security against racing, are of the greatest importance to electricians, and they are practically attained by this simple arrangement. In some s it is preferable to have ea ach engine independent, and driving its own length of shafting; this is especially the case when experi ments are required to be carried out.

The remaining four Robey engines are, therefore, each driving an independent shaft, which shaft can be coupled up to form one continuous line of shafting when necessary, friction clutches being usedfor this purpose. By this means any one of these engines can be experiment without interfering with the others,

" Von Hauer, " Fordermaschinen der Bergwerke," p. 50.

engines can be coupled together, and any one of them can be stopped independently of the others. In fact a close inspection of this exhibit will show clearly that this type of engine is admirably adapted for electric purposes, and that Messrs. Robey and Co. have carefully studied the requirements of electricians. It is also worthy of observation that these engines are all running very quietly at a moderate speed, and well within their capabilities.

Aleetings of Lublic Companies.

SIERRA BUTTES GOLD MINING COMPANY.

The ordinary general meeting of shareholders was held at the City Terminus Hotel, Cannon-street, on Thursday,
Mr. Lewis R. Price in the chair.

Mr. John S. All. (the secretary) read the notice convening the meeting. The report and accounts were taken as read.

The CHAIRMAN said the satisfactory state of their mines rendered any lengthened explanation on his part superfluous, and he was the more rejoiced at this because the state of his health had not permitted him to go so fully into the details of the accounts as it was his habit to do before addressing general meetings. With regard to the Sierra Buttes Mine they would have been gratified at finding that it had been so successfully conducted in the six months as to enable them to pay send the six of Mr. John Saul. (the secretary) read the notice convening the neeting. The report and accounts were taken as read.

The CHAIRMAN said the satisfactory state of their mines rendered.

the general healthy and prosperous state of the company, and the very promising outlook for the future. Mr. Johns fully confirmed Capt. Hosking's views, both as to the actual value of the mine and the future prospects. Captain Hosking said—
"The stopes on the hanging-wall vein have improved very much since the month of April, and the increased yield since that time is chiefly owing to this improvement. The rich ore is found in bunches or small pockets, and is richer than anything we have ever seen in the mine before. The stopes are still looking well, but as these bunches are liable to disappear any time we cannot expect these good clean-ups to be very permanent."

In spite of this warning they might, as far as could be seen, trust to the earning of steady dividends. The two principal centres of operation were the Mohawk and Eureka levels, the latter 400 ft. below the former. The work being done consisted of sinking winzes or shoots below the Mohawk with the ultimate view of connecting it with the Eureka tunnel at 300 ft. below the Mohawk. Dritts would be run to connect the winzes one with another, thus opening out a body of pay ore. Having further explained the mode of working, the Chairman thought the shareholders would agree that the hopes expressed by such practical and experienced men as Mr. Johns and Capt. Hosking were well grounded. (Hear, hear.) Besides this, they had the Rough and Ready, a distinct mine, too little developed yet to forceast its future. There was a paragraph in Mr. Johns' report in which he said—"An the Rough and Ready the rise that has been run has exposed a considerable amount of profitable ore. The building of the tramway for conveying the ore down the mountain and around to the mill is being done as fast as possible, but in building and securing it up the rocky steeps more difficulties have been encountered than were expected. This work will be completed some time in August, but at precisely what time cannot now be stated." And in a later letter he said—"A new tramway 2500 ft. long

o judiciously, had some good reason for limiting the divinent to the sector, remount.

Mr. J. C. Bollon congratulated the shareholders on the satisfactory position of the defairs of the company, and also expressed his hope, as an equal holder of oth classes of shares, that the two divisions should be amalgamated. He, however, thought it would be injudicious to pay a 4s. dividend on the Plumas Eureka shares, as they could not do so and still carry forward the stipulated mount to the reserve fund.

Mr. HOLSWORTH, as a Plumas Eureka shareholder, could not regard with atisfaction the policy disclosed by the directors as to the amalgamation of the woo sections of shares, for their property, he thought, became less valuable as the amalgamation became more proximate. He thought that a dividend of s. 6d. per share on the Plumas Eureka shares should have been divided, leaving a less amount to be carried forward.

the amalgamation became more proximate. He thought that a dividend of sa de, per share on the Flumas Eureka shares should have been divided, leaving a less amount to be carried forward.

Mr. F. TENDRON remarked that the mines were being managed in the interests of both classes of shareholders, and with regard to the division of the profits of the respective properties, it would be possible to arrange that very satisfactorily hefore the amalgamation.

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^{*} Being Noteson a Course of Lectures on Mining, delivered by Herr Bergrath Dr. Von Groddeck, Director of the Royal Bergakademie, Clausthal, The Harz North Germany,

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have been seen by the report that the Original Amador Mine had been finally abandoned, the search for ore having been unsuccessful in every direction where mining experience pointed to the possibility of existence, and the east cross-cut having only been suspended after the boundary of the property was reached, and further exploration became uscless. The Seaton Mine, it might be remembered, showed a small column of ore, upon the strength of which they were induced to purchase the mine, but the ore was found to be a very poor quality and of very small extent, and subsequent exploration failed to discover any vestige of ore. As the mine was of no isse to the company the directors authorised Mr. Johns to make such a compromise as he could with the claimant, and he finally obtained \$2006 for the giving up of the company's claims, reserving such rights as to the leasing of machinery, &c., as appeared to be requisite to enable the company to work the Maryland Aline conveniently. Their whole interest was now centred in the Maryland, and the work of developing was being carried out in the most economical manner possible. The mouthly expenditure might be set down at from 2001, to 2504, and besides the money from the Seaton compromise they might get some small supplies from the Amador property. Mr. Johns, writing on Sept. 20, expressed the belief that a good shoot of ore would be found in the Maryland Mine. There was a large piece of ground unexplored containing ore, but whether in sufficient quantities to pay or not, or whether it would result in small bunches, it would be impossible to tell until the shaft should get deeper. The CHARMAX then moved the adoption of the accounts, and Mr. T. Howe seconded the motion.

small bunches, it would be impossible to fell until the shaft should get deeper. The CHARMAX then moved the adoption of the accounts, and Mr. T. Howe seconded the motion.

Mr. BERGTHEIL, while expressing his fullest confidence in the board, thought the inception of the company should be thoroughly examined into, and if there had been a larger meeting of shareholders he would be prepared to move a resolute to that effect. He was sorry that Mr. Coulter was not present, and he hoped that at some future time they would have the opportunity of questioning that gentleman. The company had paid 260,000. for another property, which was comparatively worthless, and they had since paid 6000l. for another property, which they had given up for 490l. He thought it would be better to spend what remained in investigating the history of the company.

Mr. BOLTON said the 6000l. was spent on the Seaton and Maryland properties, one of which had been given up for 400l., while there was still some hope of the second. He thought it would be very foolish to throw away what claned they had for the sake of an enquiry which would probably do them no good.

The CHAIRMAN, in reply, said that before the Seaton and Maryland Mines were purchased, Mr. Johns was instructed to see whether any prospective mines could be obtained for the limited sum at their disposal, and which were conveniently situated with regard to the other mines. Mr. Hoskings reported favourably on the Seaton Mine, but his anticipations had not been verefied. Mr. Coulter, however, had nothing whatever to do with the purchase of these preperties.

The repert and accounts were then adopted.

GREAT LAXEY MINING COMPANY.

GREAT LAXEY MINING COMPANY.

The annual general meeting of shareholders was held at St. James's Hall, Douglas, Isle of Man, on Wednesday,
Mr. G. W. Dumbell in the chair.

Mr. J. D. Rogers (the secretary) read the notice convening the menting, and the report and accounts, an abstract of which was given in last week's Mining Journal, were taken as read. The subjoined report of the directors was submitted:

Since the last half-yearly meeting the depression in the metal market then referred to has continually become worse, but we are happy to say there are at present brighter hopes held out, and a trifling rise in the prices of ores. Under these circumstances great care has to be taken in the expenditure at the mine, and especially as the new works occasion a heavy and continual outlay, which is all provided for out of the produce of the mine. Notwithstanding all difficulties he directors have been enabled to declare the regular quarterly dividend, which the directors shave been enabled to do. The accounts furnished are made up to Aug. 8, since which the sales of ore have been very considerable, and after providing for every liability of the company, left a credit balance of \$2181.6s. 6d., ut of which the directors yesterday declared a dividend of 6s. per share theing at the rate of 20 per cent. upon the capital of the company), and carried over to credit a balance of \$7181.6s. 6d. Your directors are proud of being able to place such a statement before you. The works referred to in the report of last April are all progressing with as much speed as can be employed, and, in sdillion thereto, we have commenced to sink a new shaft to the north of Dumbell's shaft. It is being put down as a perpendicular shaft in order to be fit to receive a man-engine without any alteration. All parties connected with the working of the mine are doing their utmost for the benefit of the company, and are entitled to our thanks.

Geo. W. Dumbell,

Peter Watson,

JAMES SPITTALL,

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GEO. W. DUMBELL, PETER WATSON, JAMES SPITTALL, R. PENKETH, JAMES SPITTALL, R. PENKETH, R. PENKETH, The CHAIRMAN, in moving the reception and adoption of the report and accounts, remarked that when the shareholders considered the state of the accounts, as furnished in print, and bear in mind the extraordinary difficulties which all mining companies have had to go through during the last twelve months, owing to the depressed state of the markets, it is astonishing that Great Laxey stands almost alone as a financial success. Notwithstanding the depressed state of the mental markets, not only has Great Laxey regularly declared a quarterly dividend, but the directors were also enabled on the previous day to declare a dividend, equal to 35 per cent, per annum, and to carry 37184, forward. And he might tell them that before they declared that dividend, every liability of the company which is known was taken into account. Not only had they taken into consideration every farthing of royalty up to the previous day, but they had also allowed for the freightage payable to their steam-packet, which, although they kept a separate account, is only like paying out of one pocket into another; they had also allowed the sum of 5004, to meet every possible contingency, so that there could not possibly be any mistake. No doubt they might have gone out of their regular course and have given a larger divident, but they were satisfied that they had done right in declaring a dividend at the usual rate, and thus avoiding putting up the shares to an undue price, which might have been the effect of declaring too large advidend. They have been altering one of the ordinary shafts and they had that take out large portions in order to make it fit for the work. But this is motality and price has been going down continually, but we are now beginning to feel the benefit of a slight rise, and we are in hope that the prices will yet resume their natural position. The directors are not anxious to see the price of metal rise to an abnormally high price, to be followed by a fall; but they want to see it bringing a fairly reasonable price. In conclusion, he formally moved the resolution.—Mr. P. KILLEY seconded the motion.

Mr. PETER WATSON said that the directors were down at the mine the previous day and ways well pleased with the result.

Mr. P. Eric Watrson said that the directors were down at the Mr. PETER WATRON said that the directors were down at the mine the previous day, and were well pleased with the result of mine the previous day, and were well pleased with the result of their inspection. The shareholders will remember how perseveringly he and the other directors advocated the adoption and extension of rock-boring machinery, and now they were beginning to simply the supply of the previous day, and the other directors advocated the adoption and extension of rock-boring machinery, and now they were beginning to save the previous of the supply of the previous days and the other directors advocated the adoption and extension of rock-boring machinery, and now they were beginning to save the previous of the supply of the previous days and the other directors advocated the adoption and extension of rock-boring machinery, and now they were beginning to save the previous days and the other directors advocated the adoption and extension the previous days and the supply of the previous days and the other directors advocated the adoption and extension the proving of the supply of the previous days and the other directors advocated the adoption and extension the proving of the supply of the previous days and the other directors advocated the adoption and extension the proving of the supply of the previous days and the prev

The CHAIRMAN, in reply to questions, said the period of amalgamation might be very remote, and it would be easy to cult a meeting and divide the whole amount earned prior to the amalgamantion. The two properties combined represented half a million of money, and, of course, involved a large amount of work. With regard to the purchase of additional property, it was decompany, and it was thought very desirable to acquire the ground, which would also give them a site for a new mill when the 5th level came into play. Large and handsome plans had recently been received, and the directors were considering and handsome plans had recently been received, and the directors were considered. The continue of the series o

unanimously, Mr. Rogers, Captain Reddicliffe, and Captain Rowe returning thanks.

The Charraman referred with gratification to the testimony which the share-holders as a body have borne to the management of the mine and to the conduct and working of the directors by sending a large bundle of proxies to him representing no fewer than 4100 shares, or 802 votes. Now, that is as large a number as was accorded to him on the occasion of the great struggle in London, when their meeting, instead of lasting only a few minutes as now, occupied from twelve o'clock until half-past seven, during the whole of which time he never once quitted the chair. He desired to signify his sincere thanks to the numerous shareholders who forwarded him their proxies, thereby showing their confidence in him. It has been very satisfactory to him to have this mark of their approval, and he assured them that he would continue to do his best for the company as long as he was able.

The usual complimentary vote term inated the proceedings.

GREEN HURTH.—At a meeting of the directors of this mine, held at Newcastle-upon-Tyne on Wednesday, a dividend of 5s. per share (1600t.) was declared, and is already paid, being the second of the same amount paid this year. It was also determined to sink the main shaft 10 fms. deeper immediately, and adopt other very important measures having a tendency to open out more rapidly this extraordinary mine. this extraordinary mine.

west Basset.—At the quarterly meeting, on Tuesday (Mr. J. C. Daubuz in the chair), the accounts showed a profit on the thirteen weeks working of 1263t, 9s. 3d., and a total credit balance of a sum of 1588t. 17s. 5d. A dividend of 1500t. (5s. per share) was declared, 60t. paid towards the Associated Mines working cost, and 28t. 17s. 5d. carried to credit of next account. The Chairman explained that the accounts included costs paid on Oct. 1, and merchants' bills to the end of August. It will be seen that the cost per ton of black tin was about 4t. per ton more than in the previous quarter, this being partly due to a considerable addition to the tinstuff, estimated at over 2000 tons, remaining underground in the western part of the mine, and not drawn to surface for the convenience of working the overhanging stopes. At the same time, the costs had been increased by the advanced price of labour and materials, and a further instalment of the cost of repairs to Thomas's engine, referred to at the last meeting. Those repairs had already resulted in a considerable saving of coal consumed, which would be even more important when the wet weather sets in. The working of the mine was being energetically pushed forward, and since the publication of the manager's report the 14t, which was, now driven 90 fms. east of Thomas's, chiefly in unproductive ground, had greatly impored, and saince to Thomas's, chiefly in unproductive ground, had greatly impored, and saince to Thomas's, chiefly in unproductive ground, had greatly impored, and saince to Thomas's, chiefly in unproductive ground, had greatly impored, and saince the publication of the manager's report the 14t, which was, now driven 90 fms. east of Thomas's, chiefly in unproductive ground, had greatly impored, and saince the publication of the manager's report the 14th which was, now driven 90 fms. east of Thomas's, chiefly in unproductive ground, had greatly impored, and saince the publication of the manager's report the 14th which was, now driven 90 fms. east of Thomas'

VAN MINING COMPANY-MONTHLY REPORT.

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Oct. 13.—As follows please find my monthly report and setting list. At the 120 west we have cross-cut north 19 ft., and found the productive part of the lode to be 10 ft. wide, worth for lead about 2 tons per fathom. We also crossed south (at same point) 11 ft., but discovered nothing of importance. We have resumed the driving of the level upon a good mixture of ore ground, worth for lead about 32 cwts. per cubic fathom. The winze sinking below the 105, in advance of this end, is down 3% fins., in a productive lode, worth about 15 cwts, of lead ore per cubic fathom. This winze is sunk in the bastard by the side of the main lode. This month we have set a pare of four men to rise in the back of the 120, at a point 35 fms. west of shaft, in order to prove the extent of that section of ore ground. The lode in the rise is worth at present about 12 cwts, per cubic fathom. The three stopes in the back; of the 75 west are on the average 38 ft. wide, and are worth for lead ore 20 cwts. per cubic fathom are worth for lead ore 34 cwts, per cubic fathom. The 90 fm. level stopes (five in number) are on the average 11½ ft. wide, and are worth for lead ore 20 cwts, per cubic fathom. The stopes in the back of the 36 cwts. or lead ore per cubic fathom. The stopes in the back of the 36 cwts. or lead ore per cubic fathom. The stope in the back of the 30 cwts. or lead ore per cubic fathom. The stope in the back of the 30 cwts. or lead ore per cubic fathom. The stope in the back of the 30 cwts. or lead ore per cubic fathom. The stope in the back of the 30 cwts. or lead ore per cubic fathom. The stope in the back of the 30 cwts. or lead ore per cubic fathom. The stope in the back of the 30 cwts. or lead ore per cubic fathom. The stope in the back of the 30 cwts. or lead ore per cubic fathom. The stope in the back of the 30 cwts or stope in the back of the 30 cwts. or lead ore per cubic fathom. The stope in the deficiency of ventilation I have been obliged to withdraw two men from this end.

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ROYALTON TIN MINE.

ROYALTON TIN MINE.

In an interesting special report upon this property Mr. George Henwood, M.E., says that Royalton tin mine is a misnomer, as it cannot be called a mine in the proper acceptation of the word, it being literally a quarry of tinstone, consequently more easily wrought and proportionably more valuable. The nearest proximate instance is at Craglaze tin mine, near St. Austell. The difference is, that at Royalton there is no clay to value, but far more tin; yet the Craglaze has paid many hundreds of thousands of pounds profit, and has been wrought for many generations. My visit afforded me one of the delights that seldom falls to the lot of the miner—to see his anticipations and predictions realised. About fourteen years since I was employed by some parties resident in Bath to inspect this property; it was then being wrought for gold. In order to do this I went up to the deep adit and found no gold, but abundant evidence of tin-bearing lodes throughout. I then found it was incumbent on me to condemn the former, and earnestly advised them to abandon the shadow and hold on to the substance. I recommend them by all means to expend the little capital left in developing the great staniferous clvan. I make these preliminary remarks in order to show that I am no stranger to the ground. I will endeavour to hunt up and send you a copy of the remarks and advice I then made. The position of your present works is certainly presultar, geologically speaking, tut is in the exact position a miner would like—that is, on the south slope of the granite boss of the Castlean-Dinas Hill, close to the junction of the clay slate, and it would be a work of supercrogation to say more on this subject. That the elvan and lodes in this und the adjoining mines have been the sources whence the wonderful deposits of the wrought from pre-historic periods in the Goss Moors cannot be doubted. The unerring hand of Nature asserts the fact, for the peculiar varieties of tin ore found in the one exists in the other. Your lode, or quarry,

balance which they have in hand, recommend a further distribution of 3s. 6d, per share, making 7s. 6d. for the year, or at the rate of 9% per cent., and pro, pose to set aside 1123't, towards a reserve fund, leaving 321't, to be carried forward-

PROVINCIAL STOCK AND SHARE MARKETS.

PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Mr. S. J. DAVEY, mine share-dealer, Redruth (Oct. 13), writes:—Early in the week our market was characterised by a good demand for shares, and an improvement in prices, but the higher prices brought out a few sellers, the demand fell off, and there is but very little doing to-day. East Pools close at an advance of 2, and Dolcoaths at an advance of 1 on the week. Prices are as follows:—Blue Hills, 2½ to 3; Carn Brea, 29 to 29½; Cook's Kitchen, 25 to 25½; Dolcoath, 83 to 83; East Pool, 44 to 44½; Killifreth, 1½ to 1½; Mellanear, 4½ to 4½; New Cook's Kitchen, 40 to 45½; Wheek Kitty, 2 to 2½; New Kituy, 2 to 2½; New Kity, 2 to 2½; New Cook's Kitchen, 40 to 4½; Subth Crofty, 9½ to 10; South Gondurrow, 10½ to 10½; East Lovell, 3½ to 4½; Subth Crofty, 9½ to 10; South Frances, 16½ to 17; Tincroft, 20 to 20½; West Basset, 14 to 14½; West Frances, 18 to 19; West Kitty, 9½ to 9½; West Basset, 14 to 14½; West Frances, 18 to 19; West Kitty, 9½ to 9½; West Basset, 14 to 14½; West Poldice, 6½ to 6½; West Tolgus, 12 to 14; West Stoton, 15 to 17½; Wheal Agar, 14½ to 15; Wheal Basset, 5 to 6½; Wheal Comford, 2 to 2½; Wheal Grenwille, 11 to 11½; Wheal Prussia, 11½ to 1½; Wheal Hills, 12½ to 12½; Wheal Kitty (8t. Agnes), 1½ to 1½; West Problemen, 1½ to 2.

— Mr. J. H. Reynolds, stock and share broker, Redruth (Oct. 13), writes:—Business generally during the week has not been altogether so brisk, having been confined principally to two or three mines, such as East Pool, Dolcoath, Say thicken, 25½ to 25; Dolcoath, Say to 83%; East Pool, Dolcoath, South Frances, and Agnes. The former has risen 2½ since my last report. Subjoined are the closing prices:—Blue Hills, 2½ to 3; Oans Brea, 29½ to 29½; Cook's Kitchen, 6 to 6½; New Kitty, 2 to 83½; East Pool, 4 to 44½; East Blue Hills, 7s. 6d. to 10s.; Marke Valley, 1½ to 1½; Mellanear, 4½ to 4½; New Cook's Kitchen, 6 to 65; New Kitty, 2 to 25; Dolcoath, 83th to 154; Wheal Hills, 7s. 6d. to 10s.; Marke Valley, 1½ to 1½; Mellanear

Baset, 6 to 62; Wheal Boys, 2½ to 25; Wheal Grenville, 11 to 11½; Wheal Hony and Trelawny, 2½ to 5; Wheal Jewell, 5½ to 2; Wheal Juny, 3½ to 3½; Wheal Jewel, 15½ to 15; Wheal Prussia, 1½ to 2; Wheal Uny, 3½ to 3½; Wheal Dane, 2½ to 1.

— Messrs. Addorf and Wickett, stock and share brokers, Redruth (Oct. 13), write:—Notwithstanding the steady rise in the price of tin during the past week, only a moderate business has been done in shares, and with the exception of Dolcoath, East Pool, and South Frances, prices show but little alternation. Closing quotations annexed:—Bine Hills, 2½ to 3; Carm Brea, 29½ to 26½. Cook's Kitelnen, 25½ to 26½. Dolcoath, 86 to 89; East Pool, 40 to 14½. Cook's Kitelnen, 25½ to 45; North Busy, 24 to 1½ Kitiffeth, 15½ to 15½; Pedinan-drea, 4½ to 4½; Santa Gertraude, Cooffe, 104 to 10½; South Stittle, 104 to 160; South Coradon, 50 to 60; South Condurrow, 10 to 10½; West Busset, 14 to 14½; West Frances, 18½ to 15½; West Politice, 6½ to West Again 143; to 15½; Wheal Busset, 5½ to 26½; West Bolitice, 6½ to West Again 143; to 15½; Wheal Busset, 5½ to 10½; West Brown, 12; Wheal Greville, 11 to 11½; Wheal Jane, 3½ to 1; Wheal Buy, 3½ to 3½; West Providence, 1½ to 15½; Wheal Busset, 5½; Wheal Why, 3½ to 3½; West Providence, 1½ to 15½; Wheal Fussia, 1½ to 2; Wheal Why, 3½ to 3½; West Providence, 1½ to 15½; Wheal Fussia, 1½ to 2; Wheal Why, 3½ to 3½; West Providence, 1½ to 1½; Wheal Fussia, 1½ to 2½; Wheal Why, 3½ to 3½; West Providence, 1½ to 1½; Wheal Fussia, 1½ to 2½; Wheal Why, 3½ to 3½; West Providence, 1½ to 1½; Wheal Fussia, 1½ to 2½; Wheal Why, 3½ to 3½; West Providence, 1½ to 1½; Wheal Fussia, 1½ to 2½; Wheal Why, 3½ to 3½; West Providence, 1½ to 1½; Wheal Fussia, 1½ to 2½; Wheal Why, 3½ to 3; Wheal Greville, 1½ to 1½; Wheal Greville,

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, sharebroker and ironbroker (Oct. 3), writes:—During the past week prices have been unsettled, in sympathy with the money market, but the tendency, provided money does not get tighter, seems towards better prices, because trade generally must be active, judging from the excellent railway receipts and encouraging Board of Trade returns. The rates of continuation to next settling day (Oct. 28), as detailed below, are rather heavier than last time.

receipts and encouraging Board of Trade returns. The rates of continuation to next settling day (Oct. 28), as detailed below, are rather heavier than last time.

In shares of coal, iron, and steel companies the movements for the week comprise advances of 10s, per share on Nant-y-Glo and Blain (preferred), 2s. 8d. on Chillington Iron, also 8d. each on Benhar Coal and Umoa and Cleland; but Ebbw Vale have deelined 5s, per share, Glasgow Port Washington 4s. 8d., Clyde Coal and Marbella each is. 6d. Steel Company of Sectland are now dealt in ex div. In the Seotch pig-Iron market the price of warrants advanced to 53s, 8d., owing to larger shipments and favourable Board of Trade returns, but the tighter money market and realisations caused a relapse to 51s. 2d., although now firmer. Benhars are at 18s. to 14s.; Bolckow, Vaughan, 284 to 21½; Cardiff and Swansea 35s.; Chillington Iron, 67s. 6d. to 70s.; Chatterley Iron, 5 to 9; Chapet House Colliery, 7s. 6d. to 12s. 6d.; Clyde Coal, 57s. to 58s.; Ebbw Vale, 10½; John Bagnali and Sons, 5s. to 10s.; Llynvi and Tondu, 7½ to 8½; ditto, prel., 7s. 6d. to 5s. dis.; Lechore and Capledrae, pref., 10 to 11; Marbella Iron, 7t. 5s. to 7t. 6s. 3d.; Mwyndy Iron, 30s.; Nant-y-Glo and Blaina, pref., 36 to 38; Omoa and Cleland, 31s. to 33s.; Scottish Australian (New, 15s.; Shotts Iron, 45; Steel Company of Scotland, 9½; and West Mostyn, pref., 21s.

In shares of foreign copper concerns Rio Tinto have advanced 12s. 6d. per share, and Canadian 1s.; but Tharsis are reduced 5s., and Huntington 1s. 6d. Tharsis declined from 43 to 42½; Canadiana rea at 31s. to 33s.; Huntington, 45s.; Panulcillo, 5½ to 5½. Rio Tinto advanced 25s., and Huntington 1s. 6d. Tharsis declined from 43 to 42½; Canadiana rea at 31s. to 33s.; Huntington, 45s.; Panulcillo, 5½ to 5½. Steel Talkewallan area 43s. to 25s., and the new 16s. to 17s. Devon Friendship and Whola Arthur firmer. Blaen Caelan area 42s. Ellumenting 5s. bo 50s.; Bwlch United, 67s. 6d.; Carpella Consols, 16s.; Carn Camborne, 70s.; Devwent, 20s. to 25s

Valley, 17s. 6d. to 20s.; Old Shepherds, 5 dis. to par; Deter 107, 8. dis. to par; Parys Copper, 14s. to 15s.; Pen-yr-Orsedd, 15s., to 20s.; Pioneer, 20s. to 22s. 5d.; Pandora, 13s.; Penhale and Barton, 20s.; Roman Gravels, 11½ to 12½; South Frances, 16½; South Crebor, 5s. to 10s.; South D'Eresby, 5s. to 7s. 6d.; Silver Valley, 8s. to 9s.; Tankerville, 8s. to 10s.; Tresavean (7s. 6d. paid), 5s.; Trevince Consols, 15s. to 20s.; Tamar, 17s. 6d. to 25s. 6d.; Tincroft, 20½; United Shepherds Wheal Rose, 6s. dis.; Van, 10 to 11; Walkham United, 5s. dis. to par; West Holway, 20s. to 30s.; West Kitty, 9 to 9½; West Polbreen, 22s. 6d. to 27s. 6d.; Wheal Basset, 6 to 6½; and Wheal Fortune, 30s. to 40s.

In shares of gold and silver mines prices are firmer. Richmonds have improved from 15 to 15½; Akankoos are at 2s. 6d. dis. to par; Australasian Mines, 5s.; Colombian Hydraulic, 2s. 6d. to 5s.; Callao "Bis," 13s. 9d. to 16s. 3d.; Central Wynnad, 5s. dis. to par; Devala Moyar, 23s. 9d. to 26s. 3d.; Eureka (Nevada), 5s. prem.; Exchequer, 1s. 3d. to 3s. 9d.; Flagstaffs, 5s. to 7s. 6d.; Frontino, 65s. to 70s.; Gold Hills, 2s. prem; Gold Coasts, 2s. 6d. to 5s. prem.; Glagowe Gold, 12 to 17; Gold of Canada, 12s. 6d. to 17s. 6d.; Hoover Hills, 15s. to 20s.; Indian Glenrock, 27s. 6d. to 30s.; Indian Phoenix, 20s. to 22s. 6d.; Indian Trevelyan, 18s. 9d. to 20s.; Javali, 5s. to 7s. 6d.; Myore, 27s. 6d. to 10s.; Sew Gold Run, 4s. to 6s.; Organos, 20s. 20s.; 5t. and Wala Wynaad, 7s.

In shares of oil and miscellaneous companies, Upball Oils have improved 1s. 3d. per share-int Walkinshaw Oils have declined 7s. 6d. per share, and Milner's Safes, 9% to 10½.

Washington; 2½d., 2½d., 3d. on Huntington; 8d. on Wheal Basset; 8d., 4½d. on Marbella; 1½d. on Omoa; 6d. on Panulcillo; 4½d., 6d. on Steel Company; 15. 9d.; 2s., 2s. 6d. on Tharsis; 1s. 9d. on New; 2d. on Oakbank; 1½d. on New; 4½d. on Uphali i dd. oi. Walkinshaw; 9d., 1s. on Parafin.—Backwardations: 2s., 1s. on Rio Tinto; and 1s. on Broxburn Oll. —Pn comparing the making up prices fixed to-day for the undermentioned shares with floose current at last settlement for the same shares the variations thus shown to have taken glace during the account are as follows:—Broxburn (new) have declined 15s. per share; Uphali, 13s. 9d.; Broxburn and Young's Parafin each 12s. 6d.; Tharsis, 6s. 9d.; Steel Company of Scotland, 5s.; Oakbank, 4s. 6d.; Glasgow Port Washington, 4s.; Canada Copper, 2s. 6d.; and Benhar Coal, 1s. On the other hand, Rio Tinto have advanced 35s.; Cmoa and Cleland, 10s.; Glasgow Caradon and Oakbank (new), each 2s.; Clyde Coal, 1s. 6d.; Marbella and Panulcillo, each 1s. 3d. The tempainder are unaltered—viz., Glasgow Caradon (new), Huntington, Richmond, Thatals (new); and Welkinshaw Oil.

mond, Thatals (new); and Welkinshaw Oil.

EDINBURGH.—Messis. Thomas Miller and Sons, stock and share brokers, Princes-street (Oct. 13), write:—The amount of business done in home railways during the past week has been limited, but prices of both English and Scotch stocks have advanced. Caledonian has risen from 105 to 105½; North British from 84% cum to 55% ex div.; Glasgow and Sonth-Western from 115 to 115%. Highland is exceptionally lower, and has receded from 107 to 106. The continued dearness of money has made the sale of preference stocks less easy, and in some cases lower prices have been accepted. Canadian railways have had a smart fall, but there was some recovery to day from the lowest. American stocks have generally risen, but Reading shares have receded from the late high prices they attained. British Lines Bank stock has risen ½, to 297; and Commercial Bank, 1½, to \$53. Insurance shares have been quiet. Edinburgh Gas shares have risen ½, to 42%.

IRISH MINING AND MARKED AND MARKED AND STATES SHARES have receded from 43% to 42%.

IRISH MINING AND MISCELLANEOUS COMPANIES' SHARE MARKET.

DUBLIN, OCT. 13.—Mines have been dull during the week, and Bereshavens at 5s. 6d. are 1s. 3d. lower. Wicklow Coppers continue fairly steady, again repeating 14s., and at that are 1s. better on the week, although 2s. under the highest markings. Mining Company of Ireland shows in hiptovement of 2s. 6d. on the week, closing at 2½, after having inarked 3s. 9d. lower: Malis continue flat, with quite a triling business. Bellast and County Downs are 3s. easier at 3s, while Great Southern have dropped 10s.; to 108½. Bellast and Northern Countles are fairly steady, repeating 42½. There has been nothing doing in Preference, but in Debetture issues, Dublin and Wicklow Four per Cent. Stock repeated 108½; while Great Southern Fourpier Cent. was 10s. easier, at 109½; and Midland Great-Western Four per Cent. 5s. higher, at 107. The market for rails has sympathised with the general lepiressidut. Dealings have been few, and these but small in extent, but a considerable decline in value hist to be noted. Belfast and County Downs have fallen 5s.; Belfast and Northern Counties, 10s.; Great Southerns, 17s. 6d.; Great Northern, 20s.; Midland Great Western, 22s. 0d.; and Dublin and Wick-10w, 60s. DUBLIN, OCT. 13 .- Mines have been dull during the week, and

CORK .- Messrs. J. H. CARROLL and Sons, stock and share brokers, South Mall (Oct. 12), write:—Markets remain very dull, and Great Southerns declined to $107\frac{3}{3}$, and Midlands were done at 80 to $80\frac{1}{2}$. National Banks changed hands at 69, and Munsters at $7\frac{3}{8}$ to 80½. National Banks changed hands at 69, and Munsters at 13 to 77-16. No change in Provincials or Hibernians. Cork Steam Packets remain at 11½ to 11½; and Gas shares, 6½. Daly's shares asked for at 3. Gouldings changed hands at 8½. Harbour Board Debentures were again asked for at 10½;

MANCHESTER. - Messrs. JOSEPH R. and W. P. BAINES, sharebrokers, Queen's Chambers, Market-street (Oct. 13), write:—The markets all round have produced only a moderate amount of business for the past week, an effect contributed to doubtless by the occurrence of the week, an effect contributed to doubtless by the occurrence of the fortnightly settlement, which commenced yesterday. In the leading stocks the quotations have shown numerous fluctuations, the ruling influence having been monetary movements and traffic returns, some advances having been mide on satisfactory statements of earnings, which the former influence has counteracted in nd small degree. The strong feeling manifested last week in slares of commercial undertakings is maintained, and though there are a few instances of sharp further rise, generally speaking these intribets may be said to be only firm at full rates reached.

BANSS are very little moved either in price or dealings. What transactions are marked show rates ruling about full lately obtained, whilst the only changes in quotations are a fall of ½ and ½ respectively in Sational Provincial and Bank of Liverpool.

INSURANCE shares have been very quiet as regards lots changing bands, and in

are marked show rates ruling about full lately obtained, whilst the only changes in quotations are a fail of ½ and ½ respectively in National Provincial and Bank of Liverpool.

INSURANCE shares have been very quiet as regards lots changing bands, and inputations balance is for the worse. Higher—Maritime, ½; Manchester Fire, ½; Lower—Royal (Liverpool), ½; Liverpool and London and Globe, ½; Sea, ½; 1 and Queen, ½.

10 in the provincial late week, so far as fresh advances are concerned, but last week's intent chronicled last week, so far as fresh advances are concerned, but last week's figures are established, and sonic very fair further instances of rise recorded. During the past few days there has been a falling off in the number of transactions, but it has not been accompanied by any appreciable slipping away in quotations. Ebbw Vales have kepf fairly steady, and, compared with last week's report, but few dealings have been marked, their present quotation, is, however, fractionally better than it week ago. John Browns, Staveleys, Canmells, and Felauls are the only fresh instances of remarkable further development of strength, the first-landed, however, is exceptionally higher. On comparison the following changes are marked. Higher—John Brown, 3½; Staveley Coal, &c., 2; Cammell, 1; Pelsall, 1; West Cumberland, ¾; Nanty-Glo and Blaina, ½; Tredegar, B, ½; ditto, A, ½; Palmer's Shipbuilding, A, ½; Oreat Laxey Lead, now marked ex div., ¾; and several others fractionally. Lower—Tharsis Sulphur, &c., ½; Belckow (12L paid), ½; and Indian Phenix Gold, ½.

COTTON SPINNING AND MANNEATURINS.—A very strong tone continue to prevail, and daily several instances are noted of fresh accession of strength, attention being directed, now that many concerns have reached good figures, to concerns hithered or until lately somewhat neglected. Though cotton is lower some decline is notleeable in yarns, still the future of the trade is viewed with confidence, and there is no lack of buyers at anything near late quotations.—Telegraphy of

Hull.—Mr. W. Fowler Sutton, stock and share broker, St. Mary's Chambers (Oct. 13), writes:—The stock markets still continue irregular, and may be expected so to do until the money market settles down from its present state of uncertainty. English rails are a little higher on the week, yesterday's traffic being again satisfactory and reassuring as regards trade prospects. All turns at present on the probable further withdrawals of gold for America, but as this is involved in a state of complete obscurity it is dangerous to move either way, and the best policy is doubtless one of masterly inactivity. The same applies to Canadian rails, which are yet more complicated by the war of rates, but the oversoid state of the account and the near approach of the closing of the Lake navigation makes them well worth watching, and on any sharp fall they may pretty safely be bought. The state of the Paris Bourse continues to be the cause of numerous alarmist articles, and as they will be probably pretty correct in their predictions, the Foreign market is best left alone till matters develope. Local stock quotations:—Hull Banks, 12½; London and Vorkshire, 23s. 6d.; Vorkshire, 23½; Hull Docks, 34; ditto 4½ per cent., par to ½ prem.; Hull Trans, 9½; Hull Gas, 54; Sutton Gas, 13; Earl's Shipbuilding, 16½ dis.; Hull and Barnsley Railways, 1½ (2l. paid).

Oneida claims, belonging to us. I aim happy to say that the work has proved highly satisfactory. On Thursday week last, the 18th inst., after drifting through delves we found the top or apex of the vein almost in the centre of the Oneida patent, and to add to our good luck we found ore in the crevice, ranging from 2 to 4 in. in width. I immediately commenced to sink down to their workings, and have so far sunk 28 ft. of a winze, employing three eighthour shifts of three men each. There is not an earthly doubt but that we will connect with them in a very short time, when I shall immediately apply for an injunction to prevent their breaking on taking away any ore from that part of the mine or vein covered by our patents, and the top or apex of which is found within our surface boundaries. I regard this development as of great value to our company; it demonstrates beyond a doubt that outlying property belonging to the company that has hereafter been considered of little consequence is in reality of great value. I trust that after the close of the coming month to be able to reduce the pay-roll, and increase to a large extent the sales of ores.

DEPERTITE ORG 8. The manager reports as follows: "Very fair progress."

month to be able to reduce the pay-roll, and increase to a large extent the sales of ores.

PIERREFITTE.—Oct. 8: The manager reports as follows:—Very fair progress is being made for the force employed in stoping down the ground for a new shaft in the South Mine. In the North Mine the No. 3 stope ore No. 3 level yields 3 tons of lead ore per fathom. The cross-cut south of No. 2 level has passed through the vein of ore intersected and entered a horse of hard killas. No further ores of value have been discovered since my last report. The value of the lode, therefore, remains as then stated—viz., 3 tons of lead ore and 6 tons of the lode, therefore, remains as then stated—viz., 3 tons of lead ore and 6 tons of iron and sinc ores mixed per fathom. There is no material change in the ground in the No. 3 level. No increase has taken place since last report, but rather the other way. The weather continues dry, respecting the quantity of water flowing from the Ravine. The new crushers, iggers, &c., have been tried, and work exceedingly well. The quantity of water, however, that has been coming home this week is not enough to drive the mischine figgers, &c., so that until the weather changes we cannot reap the benefit of it. The last of the 70 tons parcel of lead ore left the Pierreitte Station for Bordeaux on Thursday. We are pushing the erection of the buddles, &c., connected to the new crusher with all speed. We are pushing on all operations we have in hand as fast as possible, and are ready to turn the dressing department to good account directly we have an increase of water, which (as stated in my last) we may have at the shortest notice.

HUBY AND DUNDERBERG CONSOLIDATED.—Report for week ending

the weather changes we cannot reap the benefit of it. The last of the 70 tons pared of lead or left the Pierreittic Station for Boriciaus no Thursday. We all speed. We are pushing on all operations we have in hand as fast as possible, and are ready to turn the dressing department to good account directly we have an increase of weter, which (as stated in my last) we may have at the shortest limited of the property of the proper

books, 34, 41, 21, 34, 59, content, par to 2, typens, 3 half Jams, 93; Half Jams, 94; Half Jams,

micaceous schist. The end of the intermediate level under No. 2 driving west from fiat lode is in an unsettled mass of schist and poor quartz, with little promise. At the No. 3 level the end south on west branch is opening a nice branch of quartz against the hanging wall containing galena, and likely to expand; now yielding 2 tons per fathom, at 10 dwts. per ton.—No. 4 level: The end driving morth of winze on great quartz lode is yielding 16 tons per fathom at 8 dwts, per ton.—No. 4 level: The end driving morth of winze on great quartz lode is yielding 16 tons per fathom at 8 dwts, per ton. The lode is becoming smaller, and now carries two well-defined walls. The ore reduced for September was 436 tons, which yielded 171 ozs. 1 dwt. of bar gold, or 7 dwts. 20 grs. per ton. A fall of rock in the waterourse, and a flood filling it with sand and gravel deprived the mills of water for some days, which has consequently lessened the returns. The mills are now going again, and all the damage is repaired, except the replacement of the water gate carried away by the flood.

SENTEIN.—Report for the month of September: Orude ore raised from the mine, 1133 tons of 1000 kilos; crude ore sent from the mine to the dressing ore dressed, and tailings ditto, 100 tons of 1000 kilos = 1043 tons of 1000 kilos; or 1000 kilos; tons of 1000 kilos; second-class, 42 tons of 1000 kilos; second-class, 42 tons of 1000 kilos; second-class, 42 tons of 1000 kilos; of 1000 kilos; or 10

[For remainder of Foreign Mines see Journal.]

South African Diamonds and other Minerals.—The gross weight of diamonds contained in packages passed through the Kimberley Post Office in 1880 was 1440 lbs. 12 ozs. avoirdupois, the estimated value being 3,367,897l. These figures compare with 1174 lbs. and 2,846,631 in 1879; 1150 lbs. and 2,672,744l. in 1878; 903 lbs. and 2,112,327l. in 1877; and 773 lbs. and 1,807,532 in 1876. The annual value of the mines in the Kimberley division owned at the end of 1880 by the Government and the London and South African Exploration Company is estimated as follows: Kimberley, 4,000,000l.; Old de Beer's, 2,000,000l.; Du Toit's Pan, 2,000,000l. Bultfontein, 1,500,000l. At the end of last year 22,000 black and 1700 white men were employed at these mines. From the Kimberley and Old De Beer's mines alone diamonds to the extent of 3,200,000l. are annually raised, while the other two mines above named yielded 300,000 carats last year. At the diggings on the Vaal river about 250 men were at work last year. The other important mining industries of the colony are the copper mines of Namaqualand, from which last year 15,310 tons of copper were exported, valued at 306,790l. From the manganese mines in the Baarl district 206 tons were exported; while at the coal mines in the Wodehouse and Albert divisions about 1000 tons were raised. The salt-pans in Simon's Town, Malmesbury, Piquetburg, Exceptive Literaberg and Crandek vielded about 9000 tons of salteraberg and contents of the colony SOUTH AFRICAN DIAMONDS AND OTHER MINERALS.—The were raised. The salt-pans in Simon's Town, Malmesbury, Piquetburg, Fraserburg, Uitenhage, and Cradock yielded about 9000 tons of salt. Mineral springs abound in the colony, many of them being well resorted to, but accommodation for visitors is, as a rule, indifferent.

We learn from Colorado that Mr. T. Currie-Gregory, F.G.S., C.E. and M.E., of London, has been examining the Trout and Fisherman Mines at Ouray.

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Mines at Ouray.

HOLLOWAY'S PILLS.—This medicine has resisted every test which time, prejudice, and vested interest could impose upon it, and it at length stands forth triumphant as the most reliable remedy for those derangements of the system so common at the change of seasons. When the air grows cooler, and the functions of the skin are retarded, an occasional dose of Holloway's pills will call on the liver and kidneys for greatest activity, and compensate the system for diminished cutaneous action. As alteratives, aperients, and tonics, these pills have no equal. To every aged and delicate person whose appetite is defective, digestion infirm, and tone of health low, this medicine will be a precious boon conferring both ease and strength.

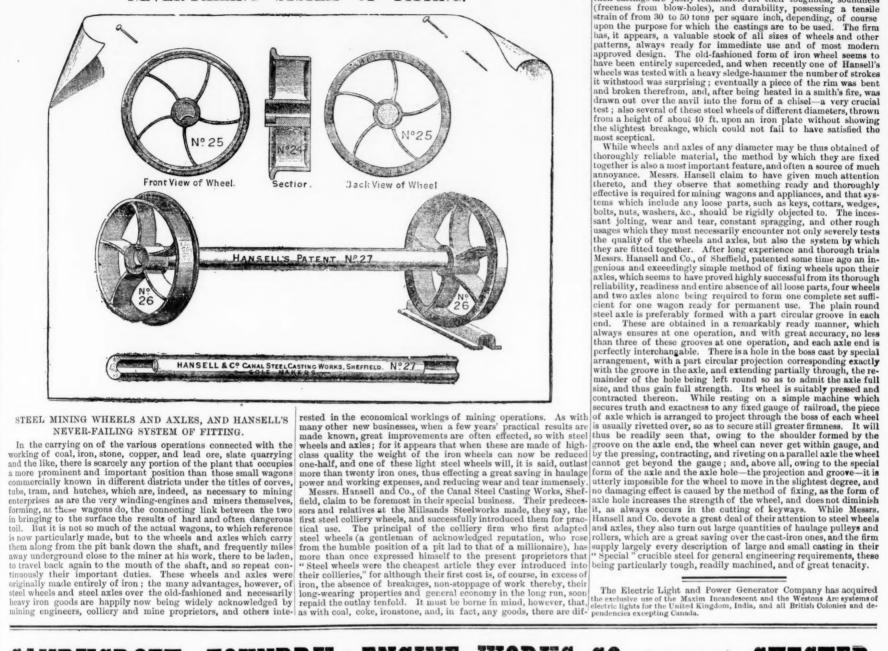
Sam	COPPER ORES. upled Sept. 21, and sold at Tabb's Hotel, Redruth, Oct. 6.
Mines. Mellanear ditto litto	Tons
01000 111	TOTAL PRODUCE.
Violet Seton West Tolgus East Pool	
LAST SALE	Average standard #90 5 0 Average produce
Standar	d of corresponding sale last month, £87 14 0 Produce, 7%
Vivian a Grenfel Nevill, William Mason a Charles	PANIES BY WHOM THE ORES WERE PURCHASED, ame. Tons, Amount. Ind Sons 11835. £ 313 1 11 I and Sons. 64 348 0 3 Druce, and Co. 7916. 196 9 8 Is, Foster, and Co. 83 333 3 3 Ind Elkington 4554 176 15 5 Lambert and Co. 5814 2152 16 6
	otal 972 £3520 7 0
NO SALE o	n Thursday last, October 13.

Copper ores for sale on Thursday next, at the Royal Hotel, Truro—Mines and parcels.—Devon Great Consols 331—Wheal Crebor 482—South Devon United 339 South Caradon 370—Marke Valley 185—Bedford United 61—East Crebor 13.—Total, 2352 tons.

COPPER ORES. Sampled Sept. 28, and sold at Swansea, Oct. 11.

Mines. Tons. Produce Price	Mines. Tons, Produce. Price.
Betts Cove 90 61/8 £3 16 6	Berehaven 74 73/8 £4 4 5
ditto 90 61/8 3 10 6	Virneherg 6 22 14 1
ditto 90 61/8 3 11 0	ditto 37 13 7 10 0
ditto 90 6 3 10 6	ditto 59 8½ 9 10 "
ditto 100 61/6 3 15 0	ditto 21 434 2 6
Caveira 97 6 3 1 6	
ditto 97 6 3 1 6	ditto 4 1676 10 10 6
ditto 96 6 3 1 6	Sobral 7 1038 6 2 0
Berehaven 74 736 4 4 6	
TOTAL P	RODUCE.
Betts Cove 460 £1646 5 0	Virneberg 123 £ 709 11 6
Caveira 290 891 15 0	
Berehaven 148 625 6 0	Sobral 7 42 17 6
THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND ADDRESS O	ODES WEDE DUDOUASED
	E ORES WERE PURCHASED.
Names.	
Copper Miners' Company	1014 24 3 0
Nevill, Druce, and Co	
Nevill, Druce, and Co	15014 664 7 0
Williams, Foster, and Co	
Mason and Elkington	
Landore Copper Company	330 1,130
Total	1052 & 4,592 7 0
NO SALE Oct. 25.	
	AVERAGES.
04 amile Buodana P	eles Per unit. Standard
Whole sale 1052 758 24	7 3 11s. 5% 1 £83 8 4
At White sure, the same man 1/8 a.	

STEEL MINING WHEELS AND AXLES. AND HANSELL'S NEVER-FAILING SYSTEM OF FITTING.



ferent grades or qualities, in a more especial manner there are therefore steel wheels and steel wheels. At the works of Messrs, Hansell, however, only one and a high-class quality of castings is turned out in their "special" crucible cast-steel, so that they believe their castings are justly remarkable for their toughness, soundness (freeness from blow-holes), and durability, possessing a tensile strain of from 30 to 50 tons per square inch, depending, of course upon the purpose for which the castings are to be used. The firm has, it appears, a valuable stock of all sizes of wheels and other patterns, always ready for immediate use and of most modern approved design. The old-fashioned form of iron wheel seems to have been entirely superceded, and when recently one of Hansell's wheels was tested with a heavy sledge-hammer the number of strokes it withstood was surprising; eventually a piece of the rim was bent and broken therefrom, and, after being heated in a smith's fire, was drawn out over the anvil into the form of a chisel—a very crucial test; also several of these steel wheels of different diameters, thrown from a height of about 40 ft. upon an iron plate without showing the slightest breakage, which could not fail to have satisfied the most sceptical.

While wheels and axles of any diameter may be thus obtained of the property of the searched wheels of the steathed of the searched wheels of the steathed of the searched wheels and sales of any diameter may be thus obtained of the searched wheels of the search

SANDYCROFT FOUNDRY & ENGINE-WORKS CO. (LIMITED), CHESTER.

PUMPING & WINDING ENGINES.

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TWO GOID MEDALS.



FLUES, CORRUGATED FURNACE



The LEEDS FORGE CO., Ltd. Leeds, Yorkshire.

PARIS, 1878

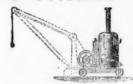


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STATIONARY ENGINE. No Building required.



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*STEAM CRANE. For Wharf or Rail.





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THESE PATENT MACHINES ARE VALVELESS.

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Normandy Rock Drill and Air Compressor, bored 1 $7-16\times101$ in 2 10 Eclipse Rock Drill and Reliance Air Compressor, $1\frac{3}{8}$ $\times 10\frac{1}{8}$ in 2 25 Beaumont Rock Drill and Sturgeon's Trunk Air

Normandy's have WON TWO GOLD MEDALS at the Melbourne Exhibition, 1880, and being the simplest, ARE MUCH THE CHEAPEST in first cost and in repairs.

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MacADAM'S VARIABLE TURBINE.

This Wheel (which is now largely in use in England, Scotland, and Ireland) is the only one yet invented which gives proportionate power from both large and small quantities of water. It can be made for using a large winter supply, and yet work with equal efficiency through all variations of quantity down to a fifth, or even less if required. It is easily coupled to a steam-engine, and in this way always assists it by whatever amount of power the water is capable of giving, and therefore saves so much fuel.

This Turbine is applicable to all heights of fall. It works immersed in the tailwater, so that no part of the fall is lost, and the motion of the Wheel is no affected by floods or back-water.

References to places where it is at work will be given on application to—

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DRESSING MACHINERY, as in operation at most of the
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INVALUABLE FOR SINKING WORK. WILL WORK SUSPENDED ON A CHAIN. NO WEARING PARTS, EXCEPT THE SIMPLE VALVES, which are replaceable by any one. WILL PUMP SANDY WATER FREELY. NEEDS NO SKILLED ATTENTION.

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Penzance, Sept. 30, 1881.

Gentlemen,—In reply to your enquiry respecting the Stone Breaker you supplied me with, I am glad to inform you that I have solved a difficulty that I have tried heretofore to overcome—viz., breaking my stone to a cube form. Having tried three other machines with sample lots, and finding both quantity broken and sample produced were not near what was represented. I was The Stamp Duty of £50 has been paid on our successful Patent, and hereby cau-tion any one against purchasing any in-fringement of the same. other machines with sample lots, and finding both quantity broken and sample produced were not near what was represented, I was of the opinion that it would be impossible to get a machine suitable for breaking my stone for road purposes, as it bears a pressure of 29,000 lbs. per square inch. The 16 × 9 machine I am now working of yours breaks about 40 tons daily, and the sample produced is all that I can wish. The bearings never become heated. I shall be glad to show your machine at work at any time to any person interested. Yours respectfully, Messrs. W. Baxter and Co. JAMES RUNNALLS.

These Machines turn out the same amount of work with less than half the power, and make a better sample of Road Metal, with 50

per cent. less waste than any other machinery, and for Crushing Purposes they are still more advantageous, as the sudden action entirely dispenses with the elogging when used for crushing softer materials, and thereby saves many breakages and a great waste of power. There is also a saving of fully 75 per cent. of lubrication required over the Blake Machine, and as a proof of this, our driving shaft never becomes heated. We are also prepared to guarantee our driving shaft from breakage in any of our Knapping Motion We have already supplied our Machines to Derby, Harrogate, and Falmouth Local Authorities; besides several Quarry Owners, FOR FULL PARTICULARS ADDRESS TO THE PATENTEES AND SOLE MAKERS,

W. H. BAXTER & CO., ALBION STREET, LEEDS.

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GOLD AND SILVER MEDALS AWARDED for Steam-Engines & Boilers, also the Special Steam Pump, and Compound Pumping Engine.



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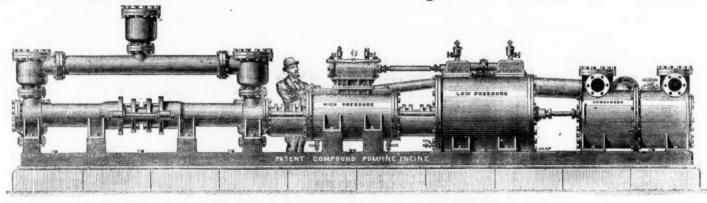
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TANGYE'S DIRECT-ACTING

COMPOUND PUMPING ENGINE,

For use in Mines, Water Works, Sewage Works,

And all purposes where Economy of Fuel is essential.



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TANGYE'S COMPOUND PUMPING ENGINE COMBINES SIMPLICITY, CERTAINTY OF ACTION, GREAT ECONOMY IN WORKING, COMPACTNESS, AND MODERATE FIRST COST.

This Engine will be found the most simple and economical appliance for Mine Draining, Town Water Supply, and Genera' Purposes of Pumping ever introduced, and as regards Mine Draining, the first cost is very moderate compared with the method of raising water from great depths by a series of 40 or 50 fm. lifts. No costly engine-houses or massive foundations, no repetition of plunger lifts, ponderous connecting rods, or complication of pitwork, are required, while they allow a clear shaft for hauling purposes In this Engine the economical advantages resulting from the expansion and condensation of steam are very simply and effectively obtained. The steam after leaving the high-pressure cylinder is received into and expanded in the low-pressure cylinder, and is thus used twice over before being exhausted into the condenser or atmosphere.

The following first-class Testimonials will bear evidence as to the efficiency and economy of the Engine:-

restimonials of tangye's compound pumping engine

Newcastle and Gateshead Water Company, Newcastle-on-Tyne, Oct. 20, 1879 36 × 10 × 48" COMPOUND CONDENSING STEAM PUMPING ENGINE

Messrs. Tangye Brothers.

Messrs.

Messrs. Tangye Brothers.

Messrs.

Mes

The Chesterfield and Boythorpe Colliery Company (Limited),
Registered Office, Boythorpe, near Chesterfield, Oct. 1, 1879.

36 × 12" × 48" DOUBLE RAM COMPOUND CONDENSING STEAM PUMPING ENGINES
Messrs. Tangye Brothers. Supplied in January, 1878.

GENTLEMEN,—Referring to the above, which we have now had working continuously night and day for the last 12 months, we are glad to say that it is giving us every satisfaction. It is fixed about 400 feet below the surface, the steam being taken down to it at pressure of 45 lbs. per square inch. We can work the pump without any difficulty at 28 strokes per minute=224 ft. piston speed. The pumping power is enormous. The vacuum in the condenser being from 11½ to 13 lbs. The pump is easily started, and works well and regularly. The amount of steam taken being much less than we anticipated. We consider the economy in working very satisfactory indeed. The desire for power and economy at the present day will certainly bring this pump into great requisition.

Yours truly,
(Signed M. STRAW, Manager

M. STRAW, Manager

SIZES AND PARTICULARS.

Diameter of High-pressure Cylinder	14 4 24 3900	14 5 24 6100	8		10 18 5 24 6100			10 18 8 24 15,650	12 21 6 24 8,800	12 21 7 24 12,000	12 21 8 24 15,650	12 21 10 24 24,450	14 24 7 36 12,000	14 24 8 36 15,650		14 24 12 36 35,225
40 lbs. pressure per square inch in Non-condensing	360	330)	160	360	250	184	140	360	264	202	130	360	275	175	122
Ditto ditto ditto—with Holman's Condenser Ditto ditto ditto—with Air-pump Condenser		307 384		213 267	480 600	333 417	245 306	187 335	480 600	352 440	269 337	173 216	480 600	367 459	234 203	162 203
1.513					CONT	INUEL).									
Diameter of High-pressure Cylinder	28 8 36 15,650 360 480	230 307	16 28 12 36 35,225 160 213 267	16 28 14 36 47,950 118 154 191	18 32 8 48 13,650 456 603 750	18 32 10 48 24,450 292 389 486	18 32 12 48 35,225 202 269 337	18 32 14 48 47,950 149 198 248	21 36 10 48 24,450 397 528 660	21 36 12 48 35,22 276 363 450	21 36 14 48 5 47,95 202 269 337	43 10 48 24,450	24 42 12 48 35,226 360 480	24 42 14 48 5 47,950 264 352 440	30 52 12 48 35,225 562 750 937	30 52 14 48 47,950 41 550 689

PRICES GIVEN ON RECEIPT OF REQUIREMENTS. Any number of these Engines can be placed side by side, to work in conjunction or separately as desired, thereby multiplying the work one Pump to any extent.

NORTHERN DEPOT:-TANGYE BROTHERS, ST. NICHOLAS BUILDINGS NEWCASTLE-ON-TYNE.

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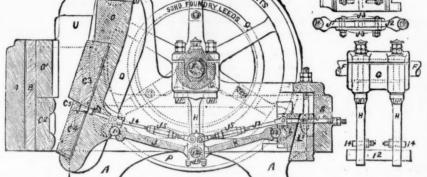
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many of the mines under our management, and are
pleased to be able to state that they have in all cases
given the greatest satisfaction.
We are, yours faithfully,
JOHN TAYLOR AND SONS.

H. R. Marsden, Esq., Soho Foundry, Meadow-lane, Leeds.

St. John del Rey Mining Company (Limited),
A SAVING OF FIFTY-FIVE HANDS BY THE USE OF
ONE MEDIUM-SIZED MACHINE.

ONE MEDIUM-SIZED MACHINE.

BLAKE'S STONE BREAKER.—Statement made by the Managing Director of the St. John del Rey Mining Company, Mr. John Hockin, with regard to six months' practical working of Blake's Stone Breaker, affording facility for judging of the relative economy of machine and hand labour in this kind of work, and also of the cost of getting the Stone Breaker to work in difficult places. The price paid to Mr. Marsden for the machine referred to by Mr. Hockin was 2180, and adding to this the cost of engine carriage, and fixing, the aggregate cost to the company of the Breaker in working order was 2500. By this outlay the company is enabled to dispense with the labour of 55 people, the value of which is £600 per annum. The cost of working the machine could not be more than the wages of about five men (the machine requires but one man to feed it, so that the rest would be for engineer, fuel, oil, &c.), and allowing for interest on outlay and for renewal when necessary, the saving must be enormous.—Mining Journal.

ALL BEARINGS are renewable, and made of H.R.M.'s Patent Compound ANTIFRICTION METAL. CATALOGUES, TESTIMONIALS, &c.

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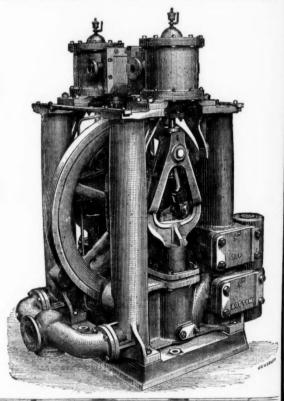
Of which he has made over 8000.

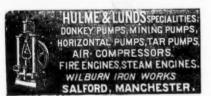
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